

Type Test Approval Application Guide for Electrical Apparatus used in Hazardous Area

Prepared by

Industrial Technology Research Institute

Date : 2012/01/10

Contents

1. Introduction.....	1
2. Type Test Approval Flow Chart	2
2.1 Type Test Application	3
2.2 Technical document Submit.....	3
2.3 Inform of Document supplement	4
2.5 Preparation of Test Sample	4
2.6 Type Test Report Delivery and Documents Return	4
2.7 Notify Type Test Result and Return Documents.....	5
2.8 Application rules for import Ex product.....	5
2.9 Definition of Similar type	6
Appendix 1 Type test serial standards CNS 3376.....	8
Appendix 2 Application forms for type test approval.....	9
Appendix 2-1 Self-Checklist of application documents	13
Appendix 2-2 Application agreement for type test approval	14
Appendix 2-3 Manufacturer's entrustment form	15
Appendix 2-4 Descriptions of article	16
Appendix 2-6 Descriptions of Model Symbol Coding Rules	19
Appendix 2-7 Descriptions the reasons of similar type	20
Appendix 2-8 List of Drawings	21
Appendix 2-9 Descriptions Symbol of Explosion Protection.....	23
Appendix 2-10 Attentions on test	26
Appendix 2-11 Test report performed.....	27
Appendix 2-12 Installation Instruction	28
Appendix 2-13 Documentations	29
Appendix 2-14 Contact personnel list.....	30
Appendix 2-15 Declaration of Conformity to Type.....	31
Appendix 2-16 Type Test Approval Application Agreement.....	32
Appendix 3 Application forms for type test approval.....	40
Appendix 3-2 Application agreement for type test approval	41
Appendix 3-3 Manufacturer's entrustment form (Example)	42
Appendix 3-4 Descriptions of article (Example)	43
Appendix 3-5 List of Similar type (Example)	45
Appendix 3-6 Descriptions of Model Symbol Coding Rules (Example)	46
Appendix 3-7 Descriptions the reasons of similar type (Example)	47
Appendix 3-8 List of Drawings (Example)	49
Appendix 3-9 Attentions on test (Example).....	50
Appendix 3-10 Test report performed (Example).....	51
Appendix 3-11 Installation Instruction (Example)	52
Appendix 3-12 Documentations (Example)	53
Appendix 3-13 Contact personnel list (Example).....	54
Appendix 4 Notice of Document Supplementation (Example)	55
Appendix 5 Test fees of type test approval application	56
Appendix 6 Testing Sample Preparation.....	57
Appendix 7 Notification of Type Test Approval Application Result.....	60
Appendix 8 Definition of Similar Type	61

1. Introduction

Mechanical and Electrical Characteristic Test Laboratory (MECTL) which is division of **Industrial Technology Research Institute (ITRI)** execute the type test certification mission according to the announcement of CLA (Council Labor Affairs) 2nd, Code 0990146695, issued by Council of Labor Affairs. Series of national standard CNS 3376 『Electrical Equipment Used in Explosive Environment』 is adopted, which is seminar to serial of standards IEC 60079 and IEC 61241 for dust explosion protection. See Appendix 1 for the list of standards. If specifically required by the applicant, both parties can mutually make agreement according to IEC60079 『Electrical apparatus for Explosive Gases Atmospheres』series of standards issued by International Electro-technical Commission. We provide type test certification service for electrical apparatus used in hazardous area [hereinafter referred to as type test certification].

This application guideline is made for the reference by the applicant for the application process. For the application information on the lab type certification test of flame-proof electrical apparatus, in addition to this manual, the applicant can also log in the web site "Electrical Equipment of Type Test Certification Technical Service" at <http://www.mepeccd.itri.org.tw> and download relevant information. The web site is updated with latest news all the time, and applicants are welcome to visit the web site. The **MECTL** reserves the right to update the application procedure in order to make it more practically.

Office Address: Room 809, 8th Floor, Pavilion 51, No. 195. Section 4, Chung Hsing Road, Jhudong Township Hsinchu County

Laboratory Address: Pavilion 24-1. No. 195, Section 4, Chung Hsing Road, Jhudong Township Hsinchu County

Application Acceptance Hours:

Monday thru Friday 09:00~12:00am; 13:00~17:00pm

Closed on Weekends, national Holidays and Force Majeure Events

Application Contact: Miss Hsieh

Tel:03-5914935 Fax:03-5916457、 03-5834405

Email: sky@itri.org.tw

Advisory on Test Object Preparation (1): Mr. Chow

Tel:03-5913842 Fax:03-5916457、 03-5834405

Email: yuhshyong_chou@itri.org.tw

Advisory on Test Object Preparation (1): Mr. Wu

Tel:03-5915002 Fax:03-5916457、 03-5834405

Email: ChunJuWu@itri.org.tw

Technical Advisory: Mr. Lai

Tel:03-5915019 Fax:03-5916457、 03-5834405

Email: cslai@itri.org.tw

2. Type Test Approval Flow Chart

Application process is shown as Figure 1.

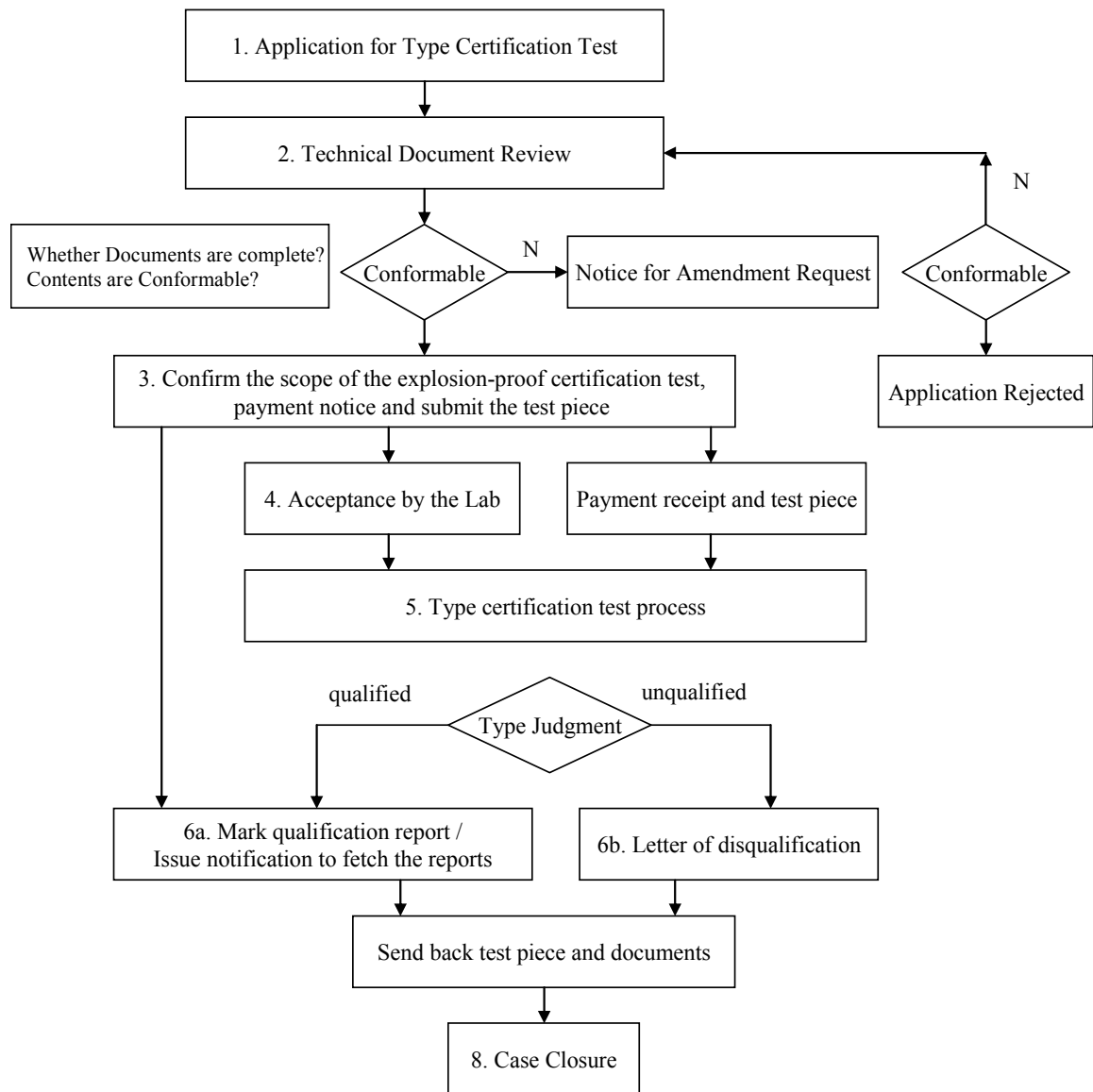


Fig. 1 Application flow chart.

2.1 Type Test Application

The applicant guide and forms can be obtained from the following locations.

- (1) Download from the service web site of "Type test certification for Electrical Apparatus used in hazardous area". Firstly, enter the web site at <http://www.mepeccd.itri.org.tw>, select page "Type test certification for Electrical Apparatus used in hazardous area", then chose "Application Certification" to download the application guideline and forms.
- (2) Use telephone, fax or email to contact administrative assistant Miss. Hsieh.

Tel: (03)59-14935, FaxⓈ(03)59-16457

Email: sky@itri.org.tw

Application documents for type test certification include : Application form, Application entrust form, List of similar types, Type symbol definition, Similar type reasons, List of drawings (including detail design drawings of explosion protection), Product characteristic description, Installation manual, Test reports and Certificate issued by other accredit body, Factory registration or other equivalent documents, Quality management system ISO 9001 document, Contact personnel list, Statement of voluntary for type compliance, Agreement for certification test application (see appendix 2). To help applicants fill out all the forms correctly, Application Example is illustrated in appendix 3.

MECTL will send "Quotation for industry Service" to the applicant for confirmation. The charge rate is list in appendix 5. The quotation is valid for 30 days (from date of issued). **MECTL** reserves the right to adjust the service fees. If government grant fund, the cost may be adjusted according to the amount of the subsidy, and the fee which listed in appendix 5 is for reference only.

Upon received of the "Industry Services Quotation", the applicant should confirm it by having it stamped or signed by authorized person of the company, and pays the fees according to the instructions on the quotation form (remittance, check or cash are acceptable). The payment receipt's copy along with the test piece are then sent via postal service or delivered directly to the **MECTL** (building No. 24-1); to be received by the **MECTL** recipient.

2.2 Technical document Submit

When receiving the application form of Type Test Certification and the accompanied technical documents, **MECTL** will conduct document review firstly. In order to speed the review process, in addition to paper copies of the documents, the applicant is asked to those electronic files of the documents in a CD. The files should

be in PDF format, the drawings in jpeg format or other formats agreed by the **MECTL**. For the documents, please attach a detailed check list, and have all the pages of the documents numbered in series, and stamped every page for confirmation. The application form should be written in Traditional Chinese, English is allowed for symbols and drawings identification.

2.3 Inform of Document supplement

When the document is found incomplete inaccurate during the review process, the **MECTL** will telephone, or send a notice of document supplement (appendix 4), to the contact person specified on the application form, and the applicant should send required supplementary documents within 15 days as the notice dated, and if the required supplementary is not received during the period, the application will be rejected, and all the forms the returned as for closure of application. After the document are reviewed and approved, the applicant will be notified to send test piece to the specified location for the test. The test piece is representative samples which will be returned to the applicant when the test is finished. To get records for verification used and test parameters settings in future. Therefore, there is a stricter policy for elaboration on document.

2.4 Test duration

The length of time of the test may vary considerably depending on different flame-proof structures and materials. If enclosure of the test piece or component made of non-metallic materials, the required testing time will be longer. But usually, excluding the time to modify inconsistent matters during the testing process, a test can be done with reports within three months.

2.5 Preparation of Test Sample

After the initial paper application steps are finished, the applicant should provide the test piece with specifications as settled during the document review. For a case with Several Similar Type, the provided test piece should be a representative of all the other types, and should conform to the specifications settled in the document review no alternative specifications are permitted Regarding the required quantity of the test piece and the preparation, see "Key Points of Preparation of Test Piece" (appendix 6) for details.

2.6 Type Test Report Delivery and Documents Return

After the tested procedure is completed, type test report will be issued. The applicant will be notified to take back the tested piece and technical documents, or they will be mailed to the applicant all together (postage to be paid by the applicant),

If the tested piece is not claimed or refused to be taken back within 3 months, it will be deemed abandoned and will be disposed as waste. The returned technical documents will be stamped with the lab's seal as certification recognition.

2.7 Notify Type Test Result and Return Documents

If the tested piece does not pass all the test items, a notification of failure (appendix 7) will be issued as for closure of application. The applicant may apply for retest, but it will be taken as a new application, and the fee paid for the previous test will not be refundable. On the occasion that document supplementary is required after the test application is established, if the required supplementary documents cannot be submitted within 15 days of the notice, the application will be treated as a failed test. After the test is completed, the applicant will be notified to take back the tested piece and technical documents, or it will be mailed to the applicant all together (postage to be paid by the applicant). If the tested piece is not claimed or refused to be taken back within 3 months, it will be deemed abandoned and will be disposed as waste. To continue on failed test with report, the applicant should apply for a retest within 3 months, and the retest will be treated as a new application, the Lab will re-quote depending on the circumstances, and the Lab reserves the right for retest fee. Beyond the 3 months, any application will be regarded as a new case.

2.8 Application rules for import Ex product

For solving the shortage of approved items, the Council of Labor Affair (CLA) announced a temporary regulation on 25 October 2012 with Authorized No. Labor Safety 2nd 0990146695. All the certify body which recognized by CLA perform the approval process. The following rules will be applied effected whatever it is domestic or imported product for the product possessing a certificate and marking issued by foreign certify body.

1. If the foreign certify body signed mutual test report recognition agreement with the type test approval body, then it can be certified without testing. The certificate valid date will be 3 years if the following documents are submitted and fulfilling certify process. But the certificate valid date will be reduced to 1 year if the technical document is not sufficiency, or the adopted standard is

not IEC 60079.

(1) Certificate (Including quality assessment certificate QAR、QAN)

(2) Test report (Test report should provide test data for test items.)

(3) Technical document (Drawings shows in the test report)

2. If the foreign certify body did not sign mutual test report recognition agreement with the type test approval body, it can be certified without testing. The certificate valid date will be 2 years although the previous listed documents were submitted and fulfilling certify process. The certificate valid date will be reduced to 1 year if the technical document is not sufficiency, or the adopted standard is not IEC 60079.

3. If employer apply certificate with single item, the certificate, test report and minimum drawings (identify the product) should be provided. The certificate will shows the particular item only.

The foreign certify body defined as one of the following organization :

(1) IEC Ex recognized organization (IEC).

(2) ILAC recognized body.

(3) IAF MLA recognized.

(4) Certified by foreign country government recognized body.

(5) Certified, authorized, recognized or assigned by foreign country government.

Those temporary rules may halted when CLA announce to do so.

That will be revised or returned to normal application procedure.

2.9 Definition of Similar type

A. Products of similar type have similar explosion protection characteristics, despite some difference in functionality or other characteristics, can be regarded as the similar type, and consequently only one of the type is required for the test.

B. The applicant should provide a list of similar type and relevant descriptive documents for the lab to decide whether or not they are Similar Type.

C. The descriptive documents should include:

- Similar Type products with different user manuals, the manuals should be provided.

- Reasons why the products are applied as Similar Type.

For more information about the Similar Type of various flameproof conformations, please see appendix 8.

Appendix 1 Type test serial standards CNS 3376

Items	Standard Codes	Names	Versions
A	CNS 3376-0/C1038-0 (IEC 60079-0)	explosive gas atmospheres-part 0: general requirements on equipment	2008.9.30
B	CNS 3376-1/C1038-1 (IEC 60079-1)	explosive gas atmospheres-part 1: flame proof enclosure conformation "d" of equipment protection	2008.9.30
C	CNS 3376-2/C1038-2 (IEC 60079-2)	explosive gas atmospheres-part 2: pressurized enclosure conformation "p" of equipment protection	2008.9.30
D	CNS 3376-5/C1038-5 (IEC 60079-5)	electrical apparatus for explosive gas atmospheres-part 5: Powder filling flame-proof conformation "q"	2002.10.30
E	CNS 3376-6/C1038-6 (IEC 60079-6)	explosive environment-part 6: oil- immersion conformation "o" of equipment protection	2008.9.30
F	CNS 3376-7/C1038-7 (IEC 60079-7)	explosive environment-part 7: increased safety conformation "e" of equipment protection	2008.9.30
G	CNS 3376-11/C1038-11 (IEC 60079-11)	electrical apparatus for explosive gas atmospheres-part 11: intrinsic safety conformation type "I"	2002.10.30
H	CNS 3376-15/C1038-15 (IEC 60079-15)	electrical apparatus for explosive gas atmospheres-part 15: Non incentive conformation type "n"	2002.12.5
I	CNS 3376-18/C1038-18 (IEC 60079-18)	electrical apparatus for explosive gas atmospheres-part 18: encapsulated type conformation type "n"	2002.12.5

Appendix 2 Application forms for type test approval

Except for the codes and descriptions of the application documents, the text shall be in traditional Chinese as the main language (providing both Chinese and English is preferred, which can be recorded together on the web site). Fill out the following application forms in the sequential order. Fill out the forms in the order described below, and forms not applicable can be omitted; for items not provided with a form, unless they are necessary, can be regarded as not applicable. Once the case is established after preliminary document examination, no supplementary documents are acceptable, so please be sure to fill out the forms carefully. For all the information, the first item is application form (two copies) which is regarded as the contract of the test application, and all the application documents should be page numbered continuously starting from page 1, with total pages marked on each page to avoid missing pages, and application forms without page numbers will be rejected.

Items	Application Forms	Application Form Descriptions
1	Application agreement for type test approval	Fill in basic information and the test specifications for the type certification test: (1)Product name: fill in the name of the tested piece, and only one name is allowed. For example: thee-phase squirrel-cage motors, fluorescent lamps, switch boxes, and so on, one application for each of the tested piece. (2)Type name: Fill in the model number of the tested piece to be sent to the Lab, and in the "Type Number Description" form describe the similar Type coding rules for the product or the apparatus (Type) in order to identify its characteristics. For application with similar Type, only the Type number is required in the form, and the mark : 『similar Type descriptions are attached』 . (3)Conformation types: such as flame-proof(d), increased safety flame-proof(e), flame-proof(px, py, pz), intrinsic safe flame-proof(ia or ib), oil flame-proof(o), powder filling flame-proof(q), n-type (nA, nC, nL, nR), immersion flame-proof(ma, mb)or special encapsulated flame-proof(s). If the tested piece contains two or more flame-proof conformations, they should all be filled in together(for example : a flame proof enclosure, flame-proof fluorescent lamp enclosure, which Ballast has special flame-proof conformations(Ex d, s)) (4)Gas group: the gas environment in which the tested object can be installed and used. I:(e.g. methane), IIA: (e.g. propane, ammonia, etc), IIB:(e.g. ethylene, ether, etc.) and IIC:(e.g. hydrogen, acetylene, etc.). For other explosive gases "belonging groups, please refer to relevant material property tables (for example: CNS3376-20 classification of material properties of flammable gases). (5)Temperature level: this field should be filled with the temperature level of the lowest self-ignition point of the flammable gas in the environment. For example: T1(450°C)、 T2(300°C)、 T3(200°C)、 T4(135°C)、 T5(100°C) and T6(85°C)。 If it is the

Items	Application Forms	Application Form Descriptions
		temperature range of special environment, remark it: e.g. -20°C~+60°C. Without the remark, it means the usage environment temperature is -20°C~+40°C. (6)Electrical specifications: Fill in the electrical specifications under normal load. For example: rated voltage, rated current, power frequency, phase, rated power (or rated horsepower), thermal insulation levels, the longest time of continuous running. All the items need to be filled out, none is dispensable. (7)Applicant name and address: The applicant must have permanent residence in Taiwan. Qualifications include manufacturers in Taiwan, import agents, distributor. If the application is made by domestic agent, a letter of entrustment of manufacturing application is required. (8)Manufacturer's name and address: If the applicant is the manufacturer, please fill out "ditto". Otherwise, please fill out the name and address of the manufacturer (or company). If there are multiple production sites, fill all in. (9)Manufacturing entrustment principle If manufacturing is under entrustment from other companies, which can be all filled in. (10)Applicant-specified test location: When special test conditions exist (such as the need to use a special power supply or device), which require the Lab to assign testing personnel to places other than of the Lab area, fill in the test location (the factory) and the address in the column of remarks and leave the rest columns blank. (11)After the application form is finished and reviewed, the applicant should have the form stamped with the seals of the company and the responsible person at the bottom of the form, and stamp the seal of the company's representative at the top of the form which grants the Lab the right of minor revision on the application contents when necessary so as to save time form document in and out. If no stamp given on the top of the form, for any revision, the applicant will be asked to fill out the form all over again.
2	Manufacturer's entrustment form	For a foreign manufacturer having no permanent address in (Taiwan), this form should be used to entrust a domestic agent who has a permanent residence in Taiwan for the application. Overseas application address is not acceptable.
3	Descriptions of article	Drawings (with dimensions) and photographs of the equipment appearance, list of key components, flame-proof conformation principles include the flame-proof structural areas or point of the test piece (with explanations why using the design drawings). Before this application, if there are other similar test objects that have passed the "Flame-proof Electrical Apparatus Certification Test", and the test reports(such as the code A970001) have already been acquired, it is required to describe the similarity and difference between this object and the one(A970001) already tested.
4	List of Similar type	When test piece with different type specifications are put together as the similar type in the application, fill in the list all the products (or equipments) of different specifications,

Items	Application Forms	Application Form Descriptions
		and apply them for test all together as one similar type. It is required to write the reasons why they are of the similar type in the form of “Descriptions of Similar Type Reasons” and, for easy identification, underline the model of the object that will actually be sent for the test.
5	Descriptions the reasons of similar type	For putting test piece with different type specifications together, it is required to write in this form the reasons why its are of the similar type.
6	List of Drawings	To highlight the flame-proof characteristics of the test piece, the applicant should fill in the list the names of the drawings of “flame-proof structure area” of the test piece (such as SU-LED-EX-OU flame-proof lamp external view drawing, SU-LED-EX-OU flame-proof lamp assembly drawing, SU-LED-EX-OU flame-proof lamp structure drawings, etc.; for the similar Type, sectional drawings or cross sectional drawings are also required), and provide one copy of the listed drawings each for assessment. The formats of the design drawings are essential. The essential items on the drawings should at least include: name of the manufacturer (e.g. AB lamps Co., Ltd.), name of the drawing (e.g. SU-LED-EX-OU flame-proof lamp design), the design secondary number, (such as flame-proof lamp appearance drawing SU-LED-EX-OU-001, flame-proof lamp assembly drawing SU-LED-EX-OU-002, etc.), also should be included are: the designer’s signature, the auditor’s signature, approval signature, design date, review date, approval date, among others. And it is required to mark on the drawings to indicate the locations and sizes for pasting the qualification labels, and provide a sample or photos of official nameplate used after mass production.
7	Descriptions of Model Symbol Coding Rules	Describe the coding rules for the similar Type products (models). For example, test piece of model SU-FL-EX-OU has the following coding rules: the first set of the code SU means flagship type (GE means general model), the 2 nd set LB means illumination lighting (LB for incandescent), the 3 rd set EX means flame-proof (AR for artistic), and 4 th set OU means outdoor type (IN for indoor).
8	Attentions on test	This is to help auditor with technical document review, making it easier to understand the flame-proof performance, operational conditions and correct installation. The applicant should provide documents of the test piece property and instructions with main contents of flame-proof design principles of the test piece (product), pinpoints of the flame-proof structure locations or point (explained with design drawings).
9	Test report performed	If the test piece already has tested reports (results) from the factory site or from a foreign test organization, the applicant may attach relevant documents for reference.
10	Installation Instruction	Describe special attentions, simple installation method and maintenance method.
11	Documentations	Company license, business register, factory register certificates or other equivalent register documents, ISO9001 quality document.
12	Contact personnel list	The listed contacts will be advised for any problems occurred during the type certification test. The applicant should assign administrative and technical staff, one of

Items	Application Forms	Application Form Descriptions
		each, as the contact persons, and fill in their contact information in this contact list.
13	Label Making	After the certification test is finished, the manufacturer's basic information and the flame-proof specifications should be labeled on the nameplate, and it is required to provide a sample of the final nameplate.
14	Declaration of Conformity to Type	This is for the manufacturer to declare that in normal production of the certified type, that specifications will be complied, without any change.
15	Type Test Approval Application Agreement	The applicant agrees with the rights and obligations of the test and the use of trademarks.

Remarks:

- For a domestic applicant (the one who produces or entrusts the production), who wishes to obtain a formal certificate after the test, the following application documents should be provided:
 - Copies of the documents of company license, business register and factory register (copies need sealed)
 - Copies of ISO 9001 certificate valid for at least 3 months or similar certification of quality management system.
- For manufacturer not in this country, the applicant should be an agent or importer who has a domestic permanent residence or business location.
- If administrative official announces factory inspection, procedures in accordance with regulations should be set up for the inspection.

Appendix 2-1 Self-Checklist of application documents

Applicant:

Date:

Article:

Ex Specifications:

Please check the following information and make sure it is complete. Please also write serial page-numbers on each page of the documents to prevent missing pages. Make sure the documents are complete and then send all at once to avoid delays due to document revision (application will be not be accepted if this form is not filled).

Items	Contents	Page Number	Self-Check Results	Remarks
1	Application agreement for type test approval		☐ complete (Sign on both copies)	Two copies
2	Manufacturer's entrustment form	1	☐ complete ☐ N/A	
3	Descriptions of article		☐ complete ☐ incomplete	
4	List of Similar type		☐ complete ☐ no similar Type	
5	Descriptions of Model Symbol Coding Rules		☐ complete ☐ N/A	
6	Descriptions the reasons of similar type		☐ complete ☐ no similar Type	
7	Attentions on test		☐ complete ☐ incomplete	
8	Test report performed		☐ complete ☐ none	
9	Installation Instruction		☐ complete ☐ none	
10	Documentations		☐ complete ☐ none	
11	Contact personnel list		☐ complete ☐ none	
12	Declaration of Conformity to Type		☐ complete ☐ none	
13	Type Test Certification Application Agreement		☐ complete ☐ none	
14	List of Drawings, including overall assemble allowance drawing, main component drawings, proposed label sample and post position. (Total : pages)		☐ complete ☐ incomplete	
Total Pages			*Please write serial page numbers on the documents	

Preparation Status of the Test Sample

Items	Status			
Whether complete?	☐ ready for shipping	☐ need __ days for preparation		
Quantity	☐ 4 (default) Impact once on each piece	☐ 2 (acceptable) Impact twice on each sample	☐ 1 Small amount (exceptional)	☐ 6 pieces for plastic
Delivery Method	☐ Self-delivery	☐ Postal mail	☐ Cargo carrier	

Appendix 2-2 Application agreement for type test approval

Admit Seal

--

檢定品名 Article	
型式名稱 Model	
防爆構造 Protection Type Construction	
易燃物族群 Flammable Gases Group	
溫度等級 Temperature Rating	
電氣規格 Electrical Specification	
產製者名稱(統一編號) Maker (ID No.) 住 址 Address	
委託產製者(統一編號) Authorized Manufacturer (ID No.) 住 址 Address	
申請者名稱(統一編號) Applicant (ID No.) 住 址 Address	
聯絡人姓名 Contact Person 電 話 Phone Number	
備 註 Remark	

Month

Day

Year

Signature of Applicant

--

Company seal

--

Representative seal

To

Industrial Technology Research Institute

(Mechanical and Electrical Characteristic Testing Laboratory)

Appendix 2-3 Manufacturer's entrustment form

To

Industrial Technology Research Institute

(Mechanical and Electrical Characteristic Testing Laboratory)

Applicant

Address :

Company :

Representative :



Company seal



Representative seal

We assign the undersigned as the agent to apply for the type test approval, delivery and retrieval of test sample.

Agent

Address:

Company:

Representative:



Company seal



representative seal

According to the regulations of management, the consignee are fully authorized to providing datum, including: apply for type test approval of electrical apparatus, drawings preparation, written amendment and revision, certificate claiming, deviation revision.

Date :

Appendix 2-4 Descriptions of article

1. Drawings of article and photograph

The drawing of whole apparatus appearance (including three side view of drawing marked with length/width/height) has to be attached and referred by picture (photograph), which shall clearly indicate dimension and shape of test piece. The drawing and photograph shall not be smaller than 3"x5".)

Sketch of product appearance (mark with length/width/height)

Photograph or overview drawing of sample

2. Approvals already obtained

(Indicate the certificate No. If the article has been qualified by previous test or certified by other accredit body. Specify the difference between this time and previous one)

3. Characteristics of test article

(1) Specify the design principle of the test component for explosion protection.

(2) Indicate the section design for explosion protection in the test component.

Component List of Apparatus (including all main components)

No.	Component	Material	Drawing No./Model No.	Supplier	Page No.	Remark
1		(name/code/composition)				
2						
3						
4						
5						
6						
7						

- * The provided information shall clearly describe that the materials used are unique. For plastic, the model from supplier shall be provided. For metal, the composition certificate shall be provided.
- * Test or certificate is requested for those inner components, the corresponding documents shall be attached.
- * To mark on the corresponding drawings if the certification documents are not available.

Appendix 2-5 List of Similar type

In case of some models are claimed to be the similar type, all of them shall be listed, and the one provided for testing should be mark with parenthesis. The model selected for testing shall be capable of representing the worst condition among of the models, which means once the test sample is qualified, other models can be inferred to be qualified also. **MECTL** reserves the right to change test sample provided. Some models may be deleted from the list by MECTL's professional judgment.

Example: flame proof enclosure and flame-proof motor (unnecessary items may be deleted according to other flame-proof characteristic)

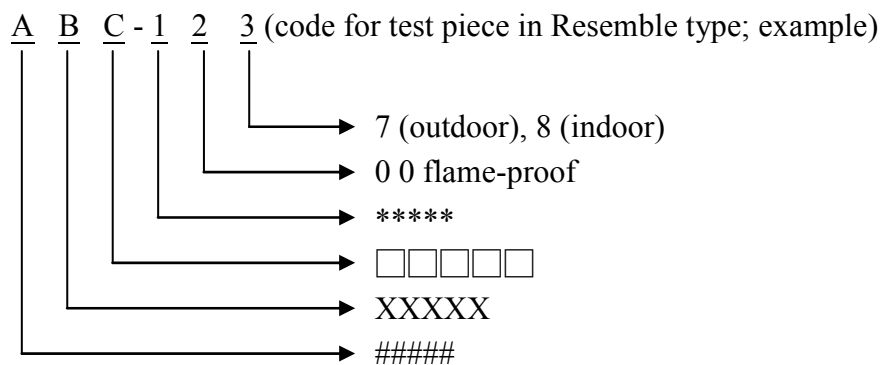
Name	Model	Power KW	Pole	Frequency Hz	Voltage V	Current A	Specification Classification	Temp resistance of Enclosure

Remark : Parentheses the model preparing for test, and the test piece shall be capable of representing all types. IF the test piece selected by applicant can not bear the worst condition, the Lab has right to delete or replace it with another representative one.

Appendix 2-6 Descriptions of Model Symbol Coding Rules

In case test piece of similar type are provided, the coding rules of type shall be filled in and specified on the nameplate.

Descriptions of Similar Type Coding Rules: example



Remark: in case test piece of Similar Type are provided, that code is required.

Appendix 2-7 Descriptions the reasons of similar type

The applicant shall specify the reasons for application with similar type.

The descriptions shall contain the following reasons, or more.

1. The location for using products of similar type.
2. Description of explosion protection construction of products that similar type with different specifications.
3. Description of explosion protection technique that adopted.
- 4,. Description of similar type recorded in the certificates of foreign tests, if it is available. Similar Type certified by foreign body, which recording similar Type avails for application.

Appendix 2-8 List of Drawings

List of apparatus component drawings

List drawings of all attachments, for fear of lost.

No.	title	Drawing name	Drawing No.	Annotation
1	appearance	appearance drawing of flame-proof apparatus	A1xx	Drawings of all test piece with similar type shall be provided separately
2	flame-proof	assembling drawing of flame-proof (flame-proof classification)	B1xx	All the junctions must be provided.
3		Section of flame-proof design	C1xx	It must be provided.
4	sectional drawing of flame-proof	Sectional drawing of flame-proof	D1xx	It must be provided.
5		Sectional drawing of flame proof(1)	D2xx	It must be provided.
6		Sectional drawing of flame proof(2)	D3xx	It must be provided.
7		Wide drawing of flameproof Enclosure and flame-proof junction	D4xx	It must be provided.
8	fastener apparatus	Fastener apparatus drawing(including screws)	D4xx	It must be provided.
9	external connecting	External connecting measure	E1xx	Provide specifications of external connecting flame-proof fitting or sealed fitting
10	label	Drawing of qualification and specification labels (including dimension) and posting location	F1xx	It must be provided.

Drawings in the list shall be attached in order after this list.

The following format shall be specified on drawings listed above.

Material	Designer	Verification	Company Name (drawing name)	Version of drawing	
				Drawing No.	Drawing serial No.

The drawing shall contain the following information:

1. The drawing shall have designer, reviewer, drawing No., version, etc. and being confirmed with signature.
2. The material and supplier type No. of all components shall be specified. The material No. shall be listed. The composition certification of material shall be provided. Uncertainty name, such as iron and aluminum, shall be avoid.
3. All (flameproof enclosure) manufacturing and tolerance of combination (for example: $10.0 \pm 0.2\text{mm}$) shall be clearly specified on drawing, It is not allowed to specify with sketch (for example: 10)
4. It must be provided the assembling drawings, which shall clearly specify assembling figures of all flame-proof junction sections and most potential clearances after manufacturing, including widths of junctions, tolerances of clearances and machining precision.
5. The thread specification, depth of screw hole and machining precision of thread shall be clearly specified.
6. Specify size and posting location of certification and specification labels. Also, provide a complete name plate which is prepared for use, and one picture or photograph with affixed labels.
7. The company usually sells apparatus with fittings. Therefore, the specification (cable gland or sealer) of external connecting fitting shall be specified as well. If the fittings in use have been qualified in other component tests, you can just list the brands and specifications.
8. The drawing ratio can not be larger than 2:1 in case the detail specification are difficult in reading. The best ratio is 1:1 However, the diagram of circuitry and other small components shall be magnified for visible identification.

Appendix 2-9 Descriptions Symbol of Explosion Protection

Product labels shall contain information of the following terms:

- (a) name of manufacturer or its registered trademark
- (b) type that manufacturer to identify their product
- (c) symbols Ex
- (d) symbol of protection type
 - “d” : flame proof Enclosure
 - “e” : increased safety structure
 - “ia” : intrinsic safety structure, class “ia”
 - “ib” : intrinsic safety structure, class “ib”
 - “ma” : encapsulating structure, class “ma”
 - “mb” : encapsulating structure, class “mb”
 - “nA” : n type, “nA”
 - “nC” : n type, “nC”
 - “nL” : n type, “nL”
 - “nR” : n type, “nR”
 - “o” : oil-immersion structure
 - “px” : pressurized type, class “px”
 - “py” : pressurized type, class “py”
 - “pz” : pressurized type, class “pz”
 - “p” : powder filling structure

For connecting apparatus, which is capable of installation in hazard area, the symbol of protection type shall be marked with square brackets. For example :
Ex d[ia] IIC T4

For connecting apparatus, which is not capable of installation in hazard area, symbol Ex and the symbol of protection type shall be marked with same square brackets. For example : [Ex ia] IIC

(e) symbol of electrical apparatus group

- for electrical apparatus used in mine with potential methane gas, label “I”
- for electrical apparatus used in potentially explosive atmosphere, label “II”, “IIA”, “IIB”, “IIC”

In case the electrical apparatus is suitable for one specific gas, and the gas is suitable for specific group of electrical apparatus, label chemical formula after the symbol of group and separate with “+”, such as “IIB+H₂”.

(f) for electrical apparatus of group II, to label symbol of temperature classification.

For cable gland cover, it is not necessary to label temperature classification or the highest surface Celsius temperature.

(g) serial number. However, the following items are excluded.

- connecting accessories(cable and conduit entry, plug, adapter and socket);
- extremely small electrical apparatus with limited space

(h) certificate issuing body or label, and certification No.

January 1st, 2011

In case the approval test is qualified, ITRI-MECTL shall produce approval logo based on regulations of the Administration Body. The following is the description of producing. After producing, Producing of approval logo:

Remark:

1. Color of approval logo: black K0; metal nameplate is required for outdoors; the material for indoors shall be mater resistant, fade resistant.
2. Certification number or code of the type Shall be located at bottom of. label
3. word making:

(1) the levels of words shall be evenly laid on the right of approval logo; the color

of word is black; traditional Chinese with ;fine-clear-font; English and numbers with :Times New Roman” font.

- (2) The word label shall at least contains: (a) type for manufacturer identification.
(b) symbol of Ex and suitable specification of flame-proof electrical apparatus.
(c) manufacturing series No. or lot No.(which may be deleted for component or small parts) (d) manufacture name or registered trademark.
4. the approval logo may scale up and down, that depends on the size of apparatus of other special requirements.

Sample:

Name: flame-proof lighting

Type: MO-140

Specification: Ex d IIB T4

Series No.: 9900001

Company Name (or trademark)

Date of manufacture: 201010

- * Real size of date plate and posting location on the apparatus shall be specified
- * Please provide one officially completed sample to certification body for filing
- * The underline on the specimen may be deleted.
- * Date of manufacture shall contain year and month.

Appendix 2-10 Attentions on test

1. If test piece has safety matters concerned, to notify the test laboratory to prevent from damage or injury.

Appendix 2-11 Test report performed

- ☐ If the result of self-test is available, please provide for reference.
- ☐ In case the specification of test sample is unique, the test may be implemented at the place provided by manufacturer.
- ☐ Foreign manufacturer shall provide certificate issued by local certification institution, which may reduce requests for testing. If the test report is available, please provide for assessment whether re-test is necessary.

Remark: if documents referred above are available, please attach in next page for references, which may save time for testing.

Appendix 2-12 Installation Instruction

All electrical apparatus shall attach instructions, which at least contain following items:

- Information labeled on the electrical apparatus, and any appropriate extra-information needed for maintaining (such as address of importer and repairer).
- Safety instruction, which shall contains:
 - list of delivery objects
 - application method
 - assembling and disassembling
 - maintenance (use and urgent repair)
 - installation
 - adjustment
- Training manual (if necessary):
- Detail description that the electrical apparatus can be safely used under the condition of expected operation in the expected area.
- Electricity and pressure parameter, the highest surface temperature and other limit values
- Conditions of particular usage, including potentially misapplying terms according to experience (if necessary).
- Significant characteristics of attachments installed in apparatus.
- Standard list which correspond to the apparatus, including issuing date.

If certificate is available, it may meet the regulation of certification.

The instruction shall contain: delivery, maintenance, inspection, inspection of correct operation and apparatus repair (if appropriate). Essential information and instructions, especially for safety.

Appendix 2-13 Documentations

- ☐1. Certificate of company license, business register and factory register or copy of document standing for establishment registration.
 - ☐2. ISO 9001 quality management system for manufacture and production with valid time at least 3 months. The applying object shall relate to manufacturing item.
 - ☐3. Certificate or inspection report of manufacturer issued by notification third part (additional document shall be provided after inspecting the factory).
 - ☐4. Certificate of foreign product issued by local certification institute.
1. After applying type certification, domestic applicant (manufacturer or commissioned manufacturer) shall file following documents for official acquisition of certificate.
 - (1) Certificate of company registration, business register and factory register or copy of registration document standing for establishment.
 - (2) ISO 9001 certificate with valid time more than 3 months or certificate copy of similar quality management system. In case the applicant does not have the ISO 9001 certificate, additional document shall be provided within 6 months. The applying object should meet to manufacturing item.
 2. In case the manufacturer is out of Taiwan, the applicant shall be a agent or importer with domestic residence or place of business.
 3. In case Council of Labor Affairs officially announce to implement inspection of factory, the additional document of inspecting procedure shall be provide in accordance with regulations.
 4. At present, foreign manufacturer shall have acquired certificate of product issued by local certification institute.

Appendix 2-14 Contact personnel list

	Liaison office of Administration Affairs	Liaison office of Technology Affairs
Applicant		
Address		
Department		
Person in Charge		
Person in Charge		
Telephone Number		
Cell Phone Number		
FAX		
E-mail		

Appendix 2-15 Declaration of Conformity to Type

本申請人切結保證經 財團法人 工業技術研究院（機電特性檢測實驗室），符合型式檢定規範之產品，於正式實施工廠檢驗前必採各項品質管理措施，以確保所登錄之產品，於生產時與型式檢定報告之原型式一致。產品資料如下：

I hereby declares that the product described below registered under the ITRI Registration of Product Certification Scheme by following the appropriate modules are under the necessary quality management measures and assure that they are identical to the prototype which is the test report.

一、 商品分類號列：

C.C.C. Code

二、 中文名稱：

Chinese name

三、 英文名稱：

English name

四、 型式：

Type

五、 同一型式：

Similar of the type

倘因違反本聲明書所保證之內容，本申請人願意擔負起所有相關法律責任，並負責對不符合型式聲明之商品，於通知期限內回收，逾期未能回收者，同意依規定核處。並同意被取消型式合格相關證明。

Where violations of this declaration occur, I agree to take the legal responsibilities and will recall non-conformity product within a given limit. If I further failed to recall the products in question, I agree to accept the penalties imposed in accordance with the related regulations.

此致

財團法人 工業技術研究院

To：Industrial Technology Research Institute

申請人：_____

Applicant

負責人：_____

Person in Charge：

日期

年

月

日

Date

(year)

(month)

(day)

Appendix 2-16 Type Test Approval Application Agreement

Type Test Approval Application Agreement

Here is _____ Co., Ltd (hereinafter referred as the applicant), who files application for approval of explosion protection electrical apparatus to Industrial Technology Research Institute (Mechanical and Electrical Character Testing Laboratory) (hereinafter referred as ITRI-MECTL). The obligations have been thoroughly informed by ITRI-MECTL. The applicant shall recognize and obey the following terms.

1. Definition of approval test

The term “Approval” denotes that the applicant files application to ITRI-MECTL in accordance with regulations of the competent authority. ITRI-MECTL shall test and assess whether the flame-proof electrical apparatus equipments comply with the standards and demands promulgated by the competent authority.

2. Scope of certification

In this letter of consent, the term “scope of certification” denotes explosion protection of electrical apparatus equipments designed by the latest corresponding version of CNS 3376 series of explosion protection electrical apparatus, or IEC 60079 series of standards and the latest version of IEC 61241 dust-explosion series of standards.

3. The right to use approval logo

3.1 The applicant shall not use approval logo authorized by the competent authority before certification or the use rights of approval logo is being terminated or revoked while certificate is qualified.

3.2 After certification, the applicant shall be informed by ITRI-MECTL about use rights of approval logo in accordance with regulations of the competent authority. ITRI-MECTL shall produce approval logo based on regulations of producing approval logo without addition, deletion and modification.

3.3 Within the time of valid certification, the applicant shall clearly label contents of certification in use of approval logo, and avoid uncertified.

3.4 To use scope of approval logo is restricted to the scope of certified. The use of approval logo shall not directly or indirectly transfer or authorize to third party.

3.5 In the use of approval logo, the applicant shall not utilize words, figures, numbers, symbols or other same and similar measures with imply or confuse the content of certificate by ITRI-MECTL.

3.6 Any above terms violated, ITRI-MECTL shall terminate the use right of approval logo and revoke the certificate without informing the applicant. The applicant shall pay for the losses, expenses, and 10 times of damage cost that attributes to breach of the contract.

4. Attention of certification

4.1 ITRI-MECTL agrees to hand over the complete test report to the applicant,

but reserves the right to change procedures and regulations of certification. Any change directly referred to the applicant will be declared on website or informed the applicant within reasonable period of time. The change will regard to be agreed, after 15 days, without opposition from the applicant.

- 4.2 ITRI-MECTL will inform the applicant in writing once the approval logo is changed. After receiving the message, the applicant shall change the content of approval logo according to the regulations of ITRI-MECTL. If the applicant does not comply the change, ITRI-MECTL will terminate use rights of approval logo and revoke approval.
 - 4.3 ITRI-MECTL shall publish the test content of certificate on the website of the competent authority and ITRI-MECTL or announced to public by other means. Any opposition shall be informed to ITRI-MECTL in advance.
 - 4.4 ITRI-MECTL will record complain or appeal from the applicant about the certification, and will reply the applicant after handling in accordance with the regulations of ITRI-MECTL.
 - 4.5 The certificate issued by ITRI-MECTL only shows the applying equipments meet the corresponding standards and demands of certification. ITRI-MECTL does not guarantee if product match with approval logo and the authenticity of information aftermath.
 - 4.6 The valid period of certification is three year. The applicant may apply for renewal, of which the referred standards are not changed, within three months before the expiration date. ITRI-MECTL shall check the related certificate and complete renewal of certification for another valid period before the term expiration.
 - 4.7 In case the applicant or third party suffers loss or derived loss from the certification that attributes to errors of test stuffs, ITRI-MECTL shall assume a indemnity obligation, and the indemnity extent is the fee required of the certification.
 - 4.8 In case the loss attributes to incorrect document or data offered by the applicant, ITRI-MECTL shall not burden as clause 4.7 ruled from item 4.7, but may ask the applicant for compensation.
 - 4.9 After receiving application for type certification, ITRI-MECTL will complete within 3 months from the date the test piece arrival at ITRI-MECTL, and issue qualified or failure report subsequently. In case the test is unable to complete within 3 months due to the applicant obligation, it shall not be subject to this requirement.
5. Rights and obligations of the applicant
- 5.1 The applicant shall offer documents or data related for certification, and cooperate with ITRI-MECTL by providing corresponding information, In case the documents or data offered by the applicant are incorrect or deficient, ITRI-MECTL shall terminate the use rights of approval logo and revoke the certificate.
 - 5.2 After acquiring the approval, the applicant shall maintain quality system and

technical capacity to meet the approval standards and demands of ITRI-MECTL. In case of violations, ITRI-MECTL may revoke the certificate.

- 5.3 The applicant shall take action, events, and participate in supervision, visit, interview, investigation, retest, etc. organized by ITRI-MECTL at regular or random schedule.
- 5.4 The applicant shall cooperate with ITRI-MECTL for supervision, visit, interview, investigation, retest, etc. and provide places, members and necessary supports helping ITRI-MECTL to accomplish these operations successfully. Furthermore, the applicant shall guarantee the place is prepared with sufficient safety facilities and meets the safety work standards according to laws.
- 5.5 The applicant shall report to ITRI-MECTL every 6months of quantity of approval logo used, series numbers or lot numbers, date and consumers. Theses records shall be stored for 3 years, and offered reports to ITRI-MECTL FOR FUTURE REFERENCES. The applicant shall not reject reviews of the records requested by ITRI-MECTL, otherwise the rights and interests related to certified may be revoked
- 5.6 The applicant shall inform ITRI-MECTL about hazard or potential hazards that involved or derived from the certification. The applicant shall inform ITRI-MECTL the necessary safety measures during certification, and assume compensation obligations for losses which attributes to incorrect or information.
- 5.7 In case third party seek compensation to ITRI-MECTL that attributes to incorrect documents and data provided by the applicant, or implemented approvals completed by ITRI-MECTL in accordance with the incorrect documents and date, the applicant shall take responsibility and burden compensation obligation.
- 5.8 In case the following terms occur, the applicant shall apply change to ITRI-MECTL within 15 days.
 - 5.8.1 Changes of ownership, name or address.
 - 5.8.2 Change of person in charge of the applicant.
 - 5.8.3 Changes of contents recorded in the certificate.
 - 5.8.4 Operation being terminated more than 30 days or change that impedes the applicant in ability or operation
- 5.9 In case the applicant dose not file application of changes according to clause 5.8, ITRI-MECTL should temporarily terminate the use right of approval logo and revoke the certificate, if necessary.
- 5.10 In case ITRI-MECTL terminate the use right of approval logo and revoke the certificate, that third party, involved be informed by the applicant in writing to cease approval tests and related operations.
- 5.11 The applicant should notify certified or being certified, and terminate

certifying operate should record for all complain, products that arise from consumers. These records shall be reserved and ready for review to ITRI-MECTL. The applicant shall handle the disadvantages and complains of approval products or services with proper measures, and document the process of handling.

6. Fees

- 6.1 The applicant shall pay certified product or service, if there is defective of complaint, should take appropriate measure and documentation procedure certification fees, including random inspection at factory, within deadline based on the regulations of ITRI-MECTL. The applicant should legally take the responsibility for delay.
- 6.2 The certification fees in the previous paragraph contain local business taxes and derived expenses by shipment.
- 6.3 After receiving the invoice, the applicant should pay the fee within the appointed time. In case of delay, the interest rate should be charged at 1% per month, the less than one month should be calculated on a month.
- 6.4 In case the applicant delays the payment, ITRI-MECTL shall suspend application or revoke the certificate without notification to the applicant.
- 6.5 The applicant should not refuse to pay the fee or request refund the fee paid in the by excuses of certification failed.

7. The ownership of the intellectual property right

- 7.1 The applicant authorize ITRI-MECTL to use test documents, data and objects free of charge in the requirement of certification or other similar test cases.
- 7.2 The intellectual property right of information, documents, data and computer program developed by ITRI-MECTL during the valid time of certification, shall belong to ITRI-MECTL.
- 7.3 Unless both parties have written agreement, the intellectual property, which has existed before application, shall not be affected by paragraph 7.2.

8. Handling for breach of contract

- 8.1 Unless otherwise stipulated in the letter of consent, the applicant, who breach the contract in minor, will be informed by ITRI-MECTL. The applicant shall improve within one month or may extend another month if there is reason particular.
- 8.2 In case the condition as previous paragraph stipulated is not improved, ITRI-MECTL should temporarily terminate the use right of approval logo without notification.
- 8.3 In case the condition as previous two paragraphs violated is serious, ITRI-MECTL shall revoke the certificate.
- 8.4 Unless otherwise letter of consent agreed and follow this agreement, ITRI-MECTL should revoke the certificate and the applicant shall return it

immediately, according to the following:

8.4.1 Fills false information for application.

8.4.2 Operation of the application is against relevant laws and regulations.

8.4.3 Issues false certificate or document for same purpose.

8.4.4 Issues false certificate or document for same purpose. Make improper statement which ITRI-MECTL being involved in controversy.

8.4.5 Seriously goes beyond the scope of certificate, or others violate the regulations of ITRI-MECTL.

9. Exercise the right of termination.

9.1 In case of the applicant terminates operation for one year, ITRI-MECTL should terminate the certification qualification by informing the applicant in written or publication; as for those have acquired the certification, ITRI-MECTL should terminate the use rights of approval logo, and revoke the certificate, or terminate terms agreed by both two parties.

9.2 In case of the applicant self-terminates the use of approval logo or terms agreed by both two parties, the applicant should inform ITRI-MECTL in written before 10 days prior to the date of termination. The applicant should pay ITRI-MECTL the test fees for all implemented operations before(including) the date of termination, and all expenses rises during the process of termination terms agreed by both two parties.

9.3 When is found an unilateral termination by the ITRI-MECTL in agreement, the ITRI-MECTL will notify the applicant by mail 10 days in advance. Fees overcharged will refund without any interest.

9.4 The reason to execute the right to termination, the termination party should notify the other party to the description. If it's involved in public benefit, must notify the fact to the public.

9.5 When terminated by the ITRI-MECTL or both parties, applicant should return the certificate to ITRI-MECTL. Within 7 days of termination date, the agency has right to abandon the case. But when special situation happens, is not included within the rules Thereby, the ITRI-MECTL has right in consideration to determinate.

9.6 Termination as defined in agreement, including temporary suspension, capon the termination ITRI-MECTL has to notifying the applicant to improve violated, any or meet requirement before restore relevant right to exercise.

10. Confidentiality

10.1 The ITRI-MECTL will provide confidentiality in all the documents information, what the applicant provided. Unless there is other agent as agrees, information will not be used, discloses, or copied except staffs, reviewer, and auditor technician observer, who involves in certification ITRI-MECTL should not use other purpose in this applicant involved in the case.

10.2 Confidential information do not include of following

- 10.2.1 Information's that has been published or by published due not by ITRI-MECTL.
- 10.2.2 The ITRI-MECTL should not be responsible to the applicant. The information from 3rd party who should not be responsible for the applicant
- 10.2.3 Before the applicant submits, the documents, the ITRI-MECTL has obtained.
- 10.2.4 Staffs of the ITRI-MECTL has right to browse and access the confidentially of developed with record written. Never referred to information submitted by the applicant..
- 10.2.5 By law or government required that information provided.

10.3 Following information is to determinate by any party, whether or not:

- 10.3.1 Confidentially information obtained by third counterpart.
- 10.3.2 Certification adopted low Technical regulations or technical standards.
- 10.3.3 Low rules that certifying body should publicly publish information.

11. Responsibilities

- 11.1 The ITRI-MECTL is responsible for any damage before deadline and responsible for fee paid attribute to his own matter.
- 11.2 If the applicant abuses certificate or cause any damage to the agency, the applicant is responsible for paying the damages, and indemnity,
- 11.3 The ITRI-MECTL is not responsible of the following, except on purpose conduct.
 - 11.3.1 Employee, Rep, contractor of the applicant who in injured or dead during the certification,
 - 11.3.2 The loss or damage to employee, Rep., or contractor.
- 11.4 Any damage, loss to 3rd party caused by any party itself, who should bear full responsibility.
- 11.5 Any party knows, according to above mentioned clause, possible appeal for indemnity, he should advise counterpart and prevent matter worse, widened.

12. Miscellanea

- 12.1 During the certification, applicant should have no objection when ITRI-MECTL asks to revise contents of certification standard specification as in requirement.
- 12.2 Previous revision, ITRI-MECTL should reasonably inform the applicant in proper period, so the applicant may adjust the content to meet revised

standard and requirement.

12.3 If there is unique certification, ITRI-MECTL will adopt other description to rule.

12.4 Any dispute or debate in the agreement is based on ROC laws.

12.5 To apply arbitration for any dispute, controversy or contravention, or violation, as ITRI-MECTL agreed arbitrator. The applicant has to renounces the contradiction power first.

12.6 In addition to the agreement or any supplement that annex to the certification provided is to restrain Both parties Rights and obligations, if matter not perfect, should both parties agree with additional supplement.

Application for certification of apparatus or equipment:

Article		Model	
Spec.		Approval Number	

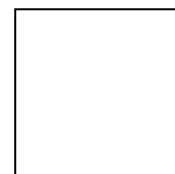
Signatory person of consent : _____

Applicant (Company Name) : _____

Business Register Identification Number : _____

Address : _____

Telephone: _____



(Company Seal)

Representative (responsible person):

Address : _____

Telephone: _____



(Representative Seal)

Y M D

Appendix 3 Application forms for type test approval

Appendix 3-1 Self-Checklist of application documents

Manufacture Applicant: Anglia Fine Lighting Co., Ltd Applicant Date: 2010/07/01

Product: Explosion-proof fluorescent lamp Explosion-proof Specification: d IIB T4

Application Checklist Main Page

Item	Content	Page	Self-check Results	Remarks
1	Application agreement for type test approval		■Complete (2 copies are sealed)	2 copies
2	Manufacturer's entrustment form	1	■Complete □N/A	
3	Descriptions of article	2	■Complete □Incomplete	
4	List of Similar type	3	■Complete □Incongruent	
5	Descriptions of Model Symbol Coding Rules	4	■Complete □N/A	
6	Descriptions the reasons of similar type	5	■Complete □Incongruent	
7	List of Drawings, including overall photos, and proposed label samples and labeling position	6	■Complete □Incomplete	
8	Attentions on test	8	■Complete □Incomplete	
9	Test report performed	9	■Complete □None	
10	Installation Instruction	10	■Complete □None	
11	Documentations	11	■Complete □None	
12	Contact personnel list	12	■Complete □None	
13	Declaration of Conformity to Type	13	■Complete □None	
14	Type Test Certification Application Agreement	14	■Complete □None	
Total	14		*Please enumerate pages in all	

Test Readiness

Item	Condition			
Whether complete?	☐ ready for shipping	☐ wait for ____ more days		
Pieces of object prepared	☐ 4 pieces (default) Impact once on each piece	☐ 2 pieces (acceptable) Impact twice on each piece	☐ 1 piece Low volume (exceptional)	☐ 6 pieces for plastic
Delivery Method	☐ Self-delivery	☐ Postal mail	☐ Cargo carrier	

Test Sample after Completion

☐ Voluntarily retrieval ☒ By mail (pay on deliver) ☐ Discard

Appendix 3-2 Application agreement for type test approval

Test (Example)

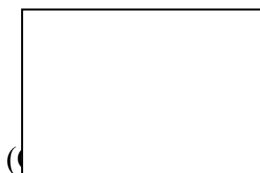
Admit Seal



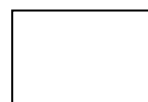
檢定品名 Article	Explosion-proof switch (vvoltage not exceeding 1,000 volts)
型式名稱 Model	SU-LB-EX-OU (more explanation on the similar types at attachment)
防爆構造 Protection Type Construction	d
易燃物族群 Flammable Gases Group	IIB
溫度等級 Temperature Rating	T4
電氣規格 Electrical Specification	3-phase ; 220v/ 1A; 60 Hz; Class E; Continuous
產製者名稱(統一編號) Maker (ID No.) 住 址 Address	Anglia Fine Lighting Co., Ltd (027509xx) No.190 ,Sec. xxxRd., Ta-Wu Township ;p Kaohsiung County
委託產製者(統一編號) Authorized Manufacturer (ID No.) 住 址 Address	Zchin Da Li Co., Ltd (02750xx)No. 100, Sec. 1, Chung-Shan Rd., Ta Dung District, Taipei City
申請者名稱(統一編號) Applicant (ID No.) 住 址 Address	Ing Tai Co., Ltd (027500xx) No. 190, Sec. 2 , xxxxxxRd., Taipei City
聯絡人姓名 Contact Person 電 話 Phone Number	Business manager: Mr. Wu xxxx. (02)288059xx
備 註 Remark	None

2010/10/01

Applicant



(Representative Seals)



To: **Industrial Technology Research Institute (Machinery and Electric
Characteristic Testing Laboratory)**

Appendix 3-3 Manufacturer's entrustment form (Example)

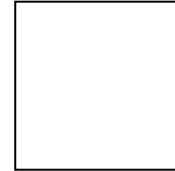
A letter to: Industrial Technology Research Institute (Machinery and Electric
Characteristic Testing Laboratory)

Applicant

Address: No.190, Sec.2, Ta-Wu Township, Kaohsiung County

Company: Angia Fine Lighting Co., Ltd

Representative: Mr. Chou xxxx



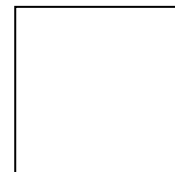
We appoint the undersigned as the agent, to apply the certification, test piece delivery AND retrieval

Agent:

Address: No.190, Sec.2, Ta-Wu Township, Kaohsiung County

Company: Formosa Co., Ltd

Representative: Mr. Oh Yang xxxx



According to the regulations of management, the consignee is fully authorized to providing datum, including: apply for type test approval of electrical apparatus, drawings preparation, written amendment and revision, certificate claiming, deviation revision.

Appendix 3-4 Descriptions of article (Example)

1. The structure of the switch box is endurance pressure explosion-proof, enclosure made of aluminum case, window made of glass. It uses the flange joint as structure design. Overall appearance of equipment design and photo as follows:

The appearance of schematic design (marked with: length, width and height)

Photo Sample

2. Test item and explosion-proof structure principles
 - (1) Outer case is explosion-proof enclosure, 20mm wide joints; 0.2mm gap, conform by CNS 3376-1、 within IIB regulation of Table1.
 - (2) Press switch and rotary switch are mounted on the explosion-proof Enclosure, 10mm wide joints; 0.20mm gap, conform by CNS 3376-1、 within IIB regulation of Table1.
 - (3) Precision components parts processed level B or above, gap to conform with requirements.
 - (4) Same inner volume that, the pressure of explosion occurring should be the same.

3. Test piece of flame-proof part

(1) Upper and lower cover of the joints.

(2) The joint between push button, selection switch and Enclosure.

4. Related to previous application:

(1) Previous certificate number; (industry) Ex 97002.

(2) Switch type different.

List of equipment composition

No.	Components Name	Material	Drawing No.	Supplier	Page No.	Remark
1	Control box base	Aluminum Alloy A1001(Aluminum 80% ; Mg1%)	AK0001	A xx	35	
2	Control box cover	Aluminum Alloy A1001(Aluminum 80% ; Mg1%)	AK0002	B xx	36	
3	Push Button	Aluminum Alloy A1001(Aluminum 80% ; Mg1%)	AK0003	C xx	37	
4	Selection switch	LED lights	AK0004	D vv	38	

Appendix 3-5 List of Similar type (Example)

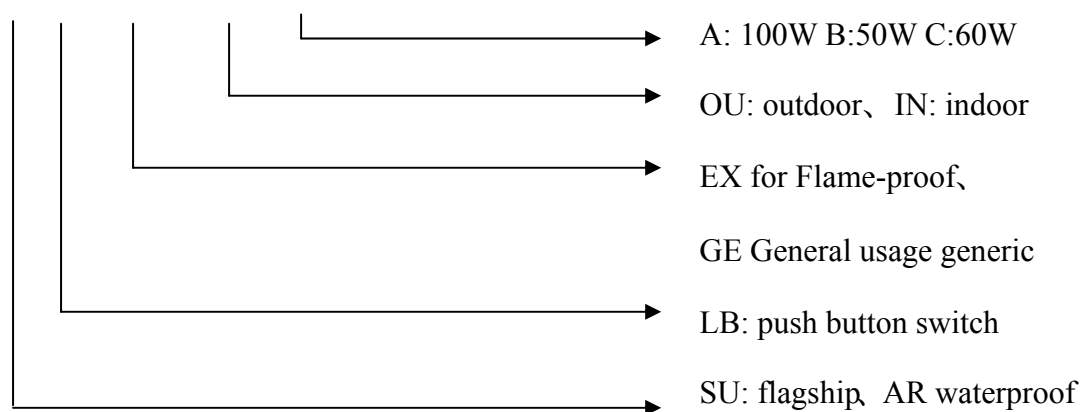
Type Name	No.	Power W	Phase P	Frequency Hz	Voltage V	Thermal insulation Level
SU-LED-WX-OU	A	W	Single phase	60	220	E
SU-LED-WX-OU	B	80				
SU-LED-WX-OU	C	60				

Remarks: 1. □ Represents as test piece will be sent to the laboratory, the first column lays as preferable.

2. The test piece should be in Similar Type, with max. current, and power load, which is adverse to explosion protection test.

Appendix 3-6 Descriptions of Model Symbol Coding Rules (Example)

SU-LB-EX-OU A



Appendix 3-7 Descriptions the reasons of similar type (Example)

Similar Type Description (not limited to the following items)

1. Similar type justification

Similar Type comparison (example of equipment for explosion-proof)

Model	Volume Appearance	Flame-proof features	Materials	Usage Location	Difference
SU-LB-EX-O U A	Framework 16L 1200cm ³	Frang junction 1 point Wide junction 25mm Gap 0.15mm	Aluminum Alloy Die Casting A23061	Zone1 IIB T4	1. Voltage 110 2. Power 100W
SU-LB-EX-O U B					1. Voltage 220 2. Power 80w
SU-LB-EX-O U C					1. Voltage 380 2. Power 60w

2. Explanation of different specifications of Test piece in Explosion-proof

Model No.	Flame-proof common point	Difference
SU-LB-EX-OU A	1. Outer covering is made for flame-proof Enclosure. 2. Push button is made for flame-proof Enclosure. 3. Same internal volume	1. Capacity 100w
SU-LB-EX-OU B		1.Capacity 80w
SU-LB-EX-OU C		1.Capacity

3. In accordance with Explosion-proof technology

- (1) Outer case is flame-proof, designed wide joints 20mm, gap 0.2mm, conform by CNS 3376-1、 IIB specification of Table 1.
- (2) Ballast is installed side of flame-proof Enclosure, wide joints 20mm, gap 0.2mm, conform with CNS 3376-1、 IIB specification of Table 1.
- (3) Components parts process is in level B or above, gap conforms with requirements.

- (4) Inner volume is same size, the pressure explosion occurring should be the same.
4. Foreign certified documents describes recording Similar Type applicable
- (1) The type of equipments has certified by ___Y___M___D in_____(country), ensured to be similar Type.

Appendix 3-8 List of Drawings (Example)

No.	Name	Drawing Name	Drawing No.	Remarks
1	External appearance	Structure appearance	SU-LB-EX-OU-001	None
2	Push button	Push Button drawing	SU-LB-EX-OU-002	None
3	Selection switch	Selection switch drawing	SU-LB-EX-OU-003	None
4	View window	View window drawing	SU-LB-EX-OU-004	None

Appendix 3-9 Attentions on test (Example)

1. Under voltage power, during lamp test, may cause damage to the bulb..
2. Apply with Proper voltage, during the test, prevent ballast for damage.

Appendix 3-10 Test report performed (Example)

- (1) SU-LB-EX-OU-A: report of the explosion-proof push button tested.
- (2) SU-LB-EX-OU-A: report of the explosion-proof selection switch tested. (by TIIS Japan)
- (3) This Type equipments tested in__Y__M__D by TIIS, Japan, firmly the similar type model confirmed as similar type product.

Appendix 3-11 Installation Instruction (Example)

1. Safety Precautions

- (1) Explosion-proof switch enclosure is designed according to explosion-proof standard, push button and selection button is designed according to explosion-proof standard.
- (2) Use the same specification when replace switch.
- (3) Ensure equipments, whether or not to watch installation location.
- (4) Ensure specification of joint should be same specification as original piece, if connector in use has the same specification as the original ones.

2. Installation

As in attachment illustration

3. Operation Instruction

- (1) Do not open the cover in random, switch power off previous to open enclosure.
- (2) Maintain the location clean, do not put any debris on it.

4. Maintenance Precautions

- (1) When intend to open the device, ensure that power is off, and keep gas flammable away.

Appendix 3-12 Documentations (Example)

- ☐ 1. Company license, Business register/Factory register or any other equivalent documents copied as the setup.
- ☐ ISO 9001 Quality management system production, validity a least 3 months which manufacture qualification documents is associated with product and test piece.
- ☐ Present the notified qualification of factory inspection or inspection report documents.
- ☐ Foreign manufacture, presents local issued certificate.

Certification documents is attached on the page

Appendix 3-13 Contact personnel list (Example)

	Liaison office of Administration Affairs	Liaison office of Technology Affairs
Applicant Name	Formosa Fire lighting Co., Ltd	Same
Applicant Address	No. 40, Chien-Min Rd., Taiwan Southern Science Park, Taiwan City	Same
Responsible departments	Business Department	Techical Department
Contact person (1)	Lin Mei-ing (Chief Commissioner of the project)	Wu Chi-Hao (Project Manager)
Contact person (2)	Chang Shiao-Hue (Duty Agent)	Song Chien-Wu (Duty Agent)
Telephone	06-333-6688 Ext.329	06-333-6667 Ext.678
Cell phone	0922936xxx	0922936xxx
Fax	06-333-6665	06-333-6665
Email	xxxx@formasa.com.tw	xxxx@formasa.com.tw
Remarks:		

Appendix 4 Notice of Document Supplementation (Example)

Notice of Document Supplementation

You applied the Flame-proof Electrical Apparatus for Certification (public service no:) all documents attached either false information or omissions must correct and supplemented within two months. Fail to provide supplement before deadline will be determined as disqualification and close the application. Errors or omissions in the information attached as follows:

Description Contact of Liaison:

Telephone:

Yours truly

Applicant:

Address:

Industrial Technology Research Institute
(Machinery and Electric Characteristic Test laboratory)

Y M D

Appendix 5 Test fees of type test approval application

Test items and fees for application of flame-proof electrical apparatus are listed below.

Non-intrinsic safety, explosion protection metallic enclosure		
term	Volume (length+width+height) (unit:cm)	Fee (NT\$)
1	below 20	60000
2	20~50	70000
3	50~80	80000
4	above 80	90000
Explosion protection non-metallic enclosure non-intrinsic safety		
1	below 20	90000
2	20~50	100000
3	50~80	110000
4	above 80	120000
Intrinsic safety explosion protection		
1	below 30	8400
2	30~130	142000
3	above 130	198000

The fee listed above is charged for ONE type certification of flammable. In case the application contains more than one flammable technique, 0.5 unit will be added for each one flame-proof technique. Besides, apparatus of similar type applies similar type of certification, 0.1 unit will be accounted and charged as for each similar type. The calculations of the fee and personnel expenses are developed in accordance with the expense standard of technology project set by, Ministry of Economic Affairs. Materials cost, equipment use and maintenance fee are calculated actual cost. The calculation has been guaranteed by qualified accountants. The fees listed above are charged for applying certification. In case certification is applied for one item, the fees would be charged as followings: if business travel for inspecting factory is necessary, according to business travel management approach of ITRI, the travel expense shall be charged applicant for NT\$3000 north Taichung and NT\$6000 south Taichung each day, and NT\$1600 for accommodation each night. If the applicant has special requirement, it would be dealt as project. The expense of travel abroad shall be charged as business travel management approach of ITRI, plus actual airfare.

The above fees are listed as reference. In case the government grants program is available. The calculations of fee will be adjusted depend on the program, and charges would be subject to the actual quote. In case re-examination is applied for the unqualified piece, the laboratory reserves right to charge for the re-test. If the failure result still occurred after re-test, the laboratory shall issue failure notification and close the case, and the test fee shall be will non-refundable. If re-examination is applied for one item, the test fee shall be charged additionally as actual amounts. (the fee shall be paid by cash, T/T, or sight check).

Appendix 6 Testing Sample Preparation

1. Testing Procedures and Preparations of Test pieces quantity:

1.1 Test Piece (including metal, enclosure, components of the metal enclosure and the glass parts)

Test sequence is as followed:

- Impact Resistance Test
- Drop Test
- Ingress Protection (IP) test
- Flame proof Enclosure. Protection type “d” test: Explosive strength test, over-pressure test and non-conductive internal ignition test.
- General requirement test
- Specified rule Protection Test

Each trial should be performed according to the sample quantities required by the regulations (Refer to, the number of samples, section 1.2 and section 1.3).1

1.2 Test piece (non-metallic enclosure and other non-metallic parts on Enclosure) preparation are shown below:

1.2.1 Group I flame-proof tests, sample testing procedures are as follows:

- (1) 4 samples follow the same procedures of thermal Test, cold tolerance test, impact test, the drop test, and thereafter, ingress the protection (IP) test; in which 2 samples are tested against low temperature, the other 2 samples against high-temperature test.

An alternative: Test 2 samples only with the standard procedure against thermal, cold tolerance, impact resistant, the drop and the ingress protection (IP) test.

- (2) Test two samples with the standard procedures against oil, grease test, impact resistance, the Drop and the ingress of protection (IP) test. Thereafter, proceed to test for the gas explosion protection type according to the regulations.
- (3) Test 2 sample with the standard procedures of flame proof test for the mining are: Impact test, Drop test and the ingress of protection (IP) test. Finally, proceed with test associated properly with gas Explosion protection type. The purpose of the testing procedures described above is to prove non-metallic material should maintain its protective measures under extreme temperature and may contact with hazardous substances. To minimize the times of test, if the sample do not show evidently damaged according to gas Explosion protection type, then the protection type test does not applied to every sample. For the same reason, the exposure test and protection-proving test that 2 samples can be operated in parallel to minimize the amount of samples.

1.2.2 Group II Flame-proof test, test piece to be tested as follows:

- (1) There should be 4 sample provided during the procedures. 2 tests can be tested at the same time to speed up the process. The 4 samples go through the standard procedure of the thermal cold tolerance, Impact, the drop, and followed the ingress protection (IP) test of which 2 sample used on low temperature tests and the other two sample used on high-temperature. Finally, test the four samples for the appropriate gas explosion protection type.
- (2) Another case provides only 2 samples. Sequentially test the 2 sample against Thermal, cold tolerance, Impact, drop and the protection (IP). Finally, proceed with tests associated with the ingress explosion protection

type according to regulations. Every sample needs to be tested in the procedure type of impact, drop and the ingress Protection (IP) test.

- 1.3 The glass pieces of the flame-proof lamps should the thermal shock test, if there is damage in the previous tests piece number of samples that add 1 piece sample to test is required.
- 1.4 Flame proof Enclosure protection type “d” test needs reference pressure by strength of explosion, over pressure and the non-conductive internal ignition test, according to regulation; the test of at least 2 sample would be sufficient. However, when it is a low production and a high cost, under unique circumstances and after agreement made by assessor and applicant that test piece would be available.

※1.5 Plastic, rubber parts are tested against “Light” test with a preparation of samples, the size and quantity of each different material required:

Plate	50mm x 60mm x 4mm	6pcs
Rod	150mm x 60mm x 4mm	6pcs
O-ring		10pcs
Gasket		10pcs

- a. Shall be sent 10 pcs each, according to every material character
- b. PCB, 2 pcs without circuit
- c. Cable gland needs additional steel rod 60 cm long, same diameter of cable gland,
- d. If there is battery, divides into single piece or array, single battery needs 5 pcs, as for array needs 2 arrays
- e. O-ring : 10 pcs. (if material is different that 10 pcs each is required)
- f. Product (assembled ready to sell): 4 pcs to test thermal endurance to cold
- g. Light test: 10 pcs size: 50 L*6 W*4t (mm)
- h. Surface resistance needs 2 pcs, external exposed plastic needs size 150 L*6 W*4H (mm) plate shall be sent 10 pcs each, according to every material character
- i. If opening left, that to seal with plug is required.

2. Preparation for the Flame proof structure gas Explosion protection type “d” Test.

- 2.1 Preparation for Flame proof construction gas explosion protection type “d”
To match gas explosive protection type “d” test that explosion strength pressure, flame non-transmission testing mechanics, the explosion test, over-pressure test and the flame test the samples provided by the manufacturer should follow the following standards.

Test requires applicant makes 2 holes at 2 short sides for gas in and out, holes are threaded.

The drilled holes should be symmetrical to increase the effect. The inlet and outlet threaded are: $\Phi 3/8$ inch x 19 thread/ inch/ PT.

2.2 Preparation work for Flame-proof motor Test

To conduct the flame proof motor test that the strength of the explosion strength, the over pressure and non-conductive internal ignition test. The manufacturer should make the samples under the following standards. On the rotation axis of 2 sides, using an electric drill on the symmetric edge position, make 1 hole each side for gas inlet and outlet, every drill a test surface of each gas introduction and export of holes each one.

- (1) The opening and the threaded hole location should be in a symmetrical

position each other. Threads are:
Φ3/8 inch x 19 thread/ inch, PT thread.

- (2) For special specifications, the applicant prepares their own test platform, on which test motor combined with driving motor as a set for dynamic explosion test.

Appendix 7 Notification of Type Test Approval Application Result

Type Test Fail Notification

Application Identification Number:

Notification Date:

The application electrical apparatus is failed according to test results.

Test Piece	Article	
	Model	
	Maker	
	Manufacture date	
Fail item	Result	

Applicant:_____

Contact Person:_____

Telephone:_____

Address:_____

Industrial Technology Research Institute
(Mechanical and Electrical Characteristic Test Laboratory)

Appendix 8 Definition of Similar Type

1. General Principles

1.1 Related matters of Similar Type

- (1) The criteria of Similar Type can be identified as “Model” 、 “Specifications”, “criteria (incl. circuits)” .. “Material”, and “Others”. It is not necessary to change “Type” for previous these change.
- (2) When the “Models” or “Specifications” belongs to the similar type, it must be clearly specified on the application, where the changed extent must all types be specified on the additional list of application.
- (3) When the “Structure” or “Material” belongs to the Similar type (within the changed extent, all the info must be clearly specified on the application. On the drawing that Test Piece and similar Type’s products shall difference be detailed; and on the drawing can clear identify the test Piece and Similar Type’s.
- (4) As for the factor of change extent on “Others”, is required to record on Similar Type List, and drawing due to may affect property of explosion protection.

1.2 Requirements to be Similar Type

- (1) In order to be recognized as Similar Type, that satisfy the following conditions is a must requirement.
 - A. Same name as the Test Piece
 - B. The shape of the main components and the shape of part structure which affect the property of explosion protection, shall be same as Test Piece.
 - C. Look from test result of Test Piece, if the property of explosion protection is same as Test Piece, according to test result of Test Piece, and obviously it is the technique of common sense, that it is needless to test.

On the application including Similar Type’s product, all the above conditions are required, meantime, Applicant has to file “The reason as Similar Type”.

Note: The certification must certify type, that method, test piece is totally made under same production line, to equip various accessories, but if frequency is different, which may not direct affect explosion protection, even there is little different from Test Piece, It still avails to apply as Similar Type.

- (2) Same name as the Test Objects, although it meets 1 of the conditions on requirements as Similar Type, But some different inspection subjects, gauge, in same operation structure, inspection principle, which are included on Similar Type. While it name is different. So pay attention on Name as follows:
 - A. Whereas a product is composed of various Electrical Apparatus (or it includes independent mechanism parts), and some of these parts are removed that the name is changed, it cannot be regarded as Similar Type.
 - B. Even if the mechanisms of the Electrical Apparatus are the same, but the

operation system and structure and are different, it cannot be regarded as Similar Type.

i.e: Micro Switch, Mercury Switch, Main Switch, cannot be regarded as Similar Type one another. Meantime, due to different temperature probe device at inspection end (thermal couple & temperature resistor) that not called as Similar Type. But it only differ from wire of thermal couple and resistor that Similar Type is available.

- C. Even if same enclosure is applied, due to different content makes name different as well, that Similar Type is unavailable.
- (3) The shape, size, function of main parts, that type differs from Test Piece, can not be called as Similar Type. But, if applied electric apparatus is explosion protection certified, which are not regarded as a part of Test Piece. E.g: motor of ventilator equipped on cooling device for temperature measurement, temperature device equipped on the measuring device for Test Piece temperature pressure probe for flame proof protection machine. If it is certified qualified device is still available as Similar Type, even type is different. But, in order to maintain individual explosion protection property that required recording certificate number on drawing accordingly.
 - (4) The Similar Type's product must have the same explosion protection mechanism as the Test Piece. If applied more excellent explosion protection device than Test Piece, It is allowed to take same as explosion protection as Test piece. If worse than Test Piece, even it totally satisfy the requirement of explosion protection, that can not call Similar Type either.
 - (5) Different types of explosion protection structures cannot be regarded as Resemble Piece. Machinery assembled with different parts of explosion protection structure, which every part of type of explosion protection structure must be same.
 - (6) If the Explosion Protection type of Electrical Apparatus (gas or steam classification) or temperature class is different, it cannot be viewed as Similar Type.
 - (7) There are examples that foreign Certifying Bodies fo perform 1 time certification for multiple devices (Series certification). But in Taiwan measure taken is different from foreign countries, the extent of series certification totally differs from Similar Type certification. DO NOT CONFUSE ON APPLICATION.

2. The scope of electric apparatus for structure of explosion protection.

2.1 Requirements of conditions of Similar Type

For the construction of electrical apparatus for flame proof explosion protection, At least, shall be same 1 of conditions of the following table, otherwise, it excludes the extent Similar Type, Besides, There is * marked condition, is the extent of Similar Type is included, which illustrates the extent of property of explosion protection is not affected, Except concrete example, The extent what Similar Type covers. After clause 2.2 there is detailed description, aiming at 3-phase motor, luminaries, socket typed thermal couple, temperature resistor, based on specialty of machine, that to consider

the extent of Similar Type id required. View detailed 2.9.3

Requirements of Similar Type		
Material	• Materials of the enclosure. (Include Material of Anti loose bolt, and nut) • Coil material • The structure and testing methods are based on material of technical criteria (i.e. Cooling fan, fan hood, light transmitting part, subject of impact, etc). • The covering material applied the on joint surface of fight transmitting parts.	*
Structure (Shape. Size)	• Protection Type • Cooling methods (requirements condition affect to cool off the Electrical Apparatus) • Structure of the enclosure (shape, size, thickness, manufacture methods, joint surface, the structure, Size, reinforced material, category. Size, length, position of and loose bolt, kinds of anti loose bolt and nut, size, length of anti loose bolt and nut. The status of packing resin, package, gasket, size, of cementing joint, shaft, and size, structure, of operation rod). • The conditions may affect the standard pressure during explosion test (The thickness accumulated of steel core motor of motor, the structure of rotor). • The degree of completion of the joint for anti flame run random, and embedded Bolt. • Structure and size of the vent and drain. • The size and installation method of light transmitting part, package of installation, Packaging, shape & size of gasket.	*
Internal machinery. Parts	Internal machinery, category, specification of parts.	*
Name	Name of the electrical Apparatus for explosion-protection	

2.2 Substantial examples of material application

(1) Materials of accessory outside enclosure

Blind, water-proof hood ,and accessory which has no direct relation with the Property of explosion、 If it can be explained that material change shall not affect the rise of temperature, that Extent of Similar Type is included

(2) Coil material

The change of coil, in principle, it excluded the extent of Similar Type. But for total structure of insulation, & affect of volume occupation ration are same as in Resemble condition, and it is acceptable for the rise of temperature, and applied with 1 level higher insulation grade, that Similar Typed product is available

i.e.: If the insulating material of the Motor Test Piece ,of which insulation is equipped with E class for certification, but B class insulation which is same designed as E class is replaced, this case that Similar Type is available, Such condition the insulation of similar Typed shall mark “E(B)”. Same situation, Test Piece is applied with B, but F level material is equipped on Similar Typed product, that shall mark “B (F);”

Notice; If mark is E (B), it shall record temperature tolerance of material E on bulletin, record temperature tolerance B material on bulletin, if Mark is B (F).

2.3 Substantial example relating to change of structural

(1) Protection Type

Although protection shall be Similar Type, if doesn't affect scope of flameproof performance, the following example is allowable to regard as Similar Type.

- A. To apply Test Piece with Blind, waterproof hood it temperature rise is not affected by accessories removal that define on Similar Type is acceptable.
- B. Test Piece with water proof package, it is regards as Similar Type, if package removed, and structure of Test Piece differs from Similar Type, if type mark can classified, please provide name of Type.

(2) Cooling type:

Cooling fan, air-condition, of which condition affected by temperature rise of Electrical machine, like, shape, size, cold catalyst volume pressure (wind, water), temperature (water) DIFFERS FROM Test Piece that can't regard as Similar Type.

(3) Structure of enclosure

If Enclosure is not Similar Type, surely Similar Type is regardless, if structure is different, it's not Similar Type. The following example is Similar Type, if does not affect actual flameproof performance.

- A. Ballast for luminaries only shape, Enclosure filled with filler, except length, size is same, volume of actual space after filled is same, but length, size is same, volume of actual space after filled is same, but length of Enclosure is shorter than Test Piece, here regards as Similar Type.
- B. Tube shape in Enclosure, is shorter than Test piece, reference pressure is lower than Test piece the Similar Type regarded.
- C. Part of Enclosure must equip with plug for Electrical machine, Test piece with plug, as for plug less product is regards as Resemble Piece is acceptable, but thickness of Enclosure with plug should be same thick as plug less enclosure or restricted in smaller
- D. Test piece w/window does not regard same Similar Type as w/t window Test piece, because reference pressure differ each other.
- E. Parts installed outside Enclosure is related to impact test, parts disassembled and part installed on Enclosure are not Similar Type, due to change of impact test on Enclose.

2.4 Machine installed on gas explosive surface

To equip machine, shaft, conduit apparatus on surface of Enclosure, that structure, size quantity, allocation, type of machine, for threaded hole, should be regarded as extent of Similar Type, and the following consideration, shall fit every enclosure face,

(1) Structure and size of thread hole

If differs from test piece, is not Similar Type, fastener's shape, joint face's gap length, shaft's diameter, machine installation's position, locking structure differs from test pieces, shall present certificate, Example: threaded hole M20, M40, M60 are named and equipped on Test piece (Say precision of Bolt and resin, related conditions are the same), other than these 3 types processed are not Similar Type.

(2) Number of threaded hole (install machinery number)

- A. Same structure, size of threaded hole is less than Test Piece, that aiming at number of various threaded holes are few, so it is Similar Type. E.g. threaded holes number of Similar Type should meet M20 is A pcs, M40 is B pcs, M60 is C pcs.
- B. When threaded holes are reduced that it's principle is not add threaded hole at the position. (Additional threaded hole is plugged, that to fix plug, lock structure, install parts-machine, where's are the same condition)

(3) Threaded hole allocation

If on same surface of enclosure, may be obvious affect to flame proof performance if threaded hole removed, that the change of thread hole position should be contained in extent of Similar Type. In this condition is same as different structure, size of threaded hole, as its position replaced each other. Besides, then it is obvious affect performance of flame proof that Test Piece need to compare threaded hole whether or not over concentrated at same area, or interval of thread hole whether or not too narrow, that may affect strength of enclosure.

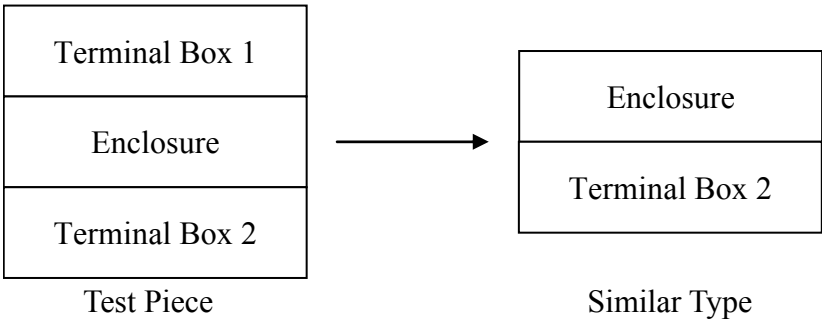
(4) To install type of machine

The install same thread hole on different machine types, installed number of thread-hole on machine is less than Test piece installed that Similar Type is available.

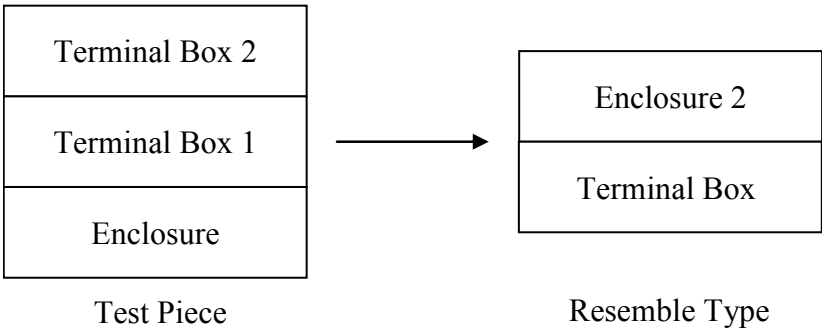
2.5 The assembly of Enclosure (composition of Enclosure)

Electrical apparatus is composed with many enclosures which are flame proofed, while a few piece are removed (or a part), the part left do not affect the performance of flame proof, and keeps electrical apparatus function, is allowed to include in Similar Type. But if Enclosure got structure changed, and name of Electrical apparatus changed as well, that to apply for new test item, which cannot be called Similar Type.

- (1) The following drawing is the Test Piece of motor equipped electric heater inside, is example of Similar Type with machine without Electrical heater inside even terminal Enclosure which Electric Heater removed doesn't affect explosion protection performance that Similar Type is available. But in such condition, It must mark non-thread hole between Enclosure and conduit of terminal Box1 (Enclosure side). If threaded hole need to be plugged or block sealed, which differ from Test Piece, and it shall perform explosion strength test for block board, or ignition test for checking flame run away. It can not be classified as Similar Type.



- (2) The following illustrates 1 enclosure removed, still called Similar Type. But it must meet the following condition, so in other words, by composition of Enclosure, New Gap must be tested by flame ignition (Test Piece non-exist gap), that is not Similar Type
- A. Terminal box and enclosure that conduit leads into enclosure 1 and enclosure 2 by conduit (includes structure. Size) are the same. (Leading flameproof covered wire, type of wire and inner packaging diameter may be different).
 - B. Terminal box and Enclosure 1's joint that size are various, and Enclosure 1 and enclosure 2's joint that size are various (Relating to all size of fasteners)



2.6 Electrical Apparatus and parts equipped in Enclosure

If Electrical apparatus and parts equipped in Enclosure differ from Test Piece, in principle, is not Similar Type. But it is available for Similar Type if satisfied with the following, and machinery installed on enclosure surface, that extent of Similar Type, to refer to 2.4.

(1) According to specification

Aiming at machinery or parts equipped inside are general specification, and Aiming at Non-general specified among specifications, some are Similar Type electrical machinery part(e.g.: lamp)mush appoint manufacturer, Type, specification for to be Similar Type.

(2) Temperature rise

In order to be Similar Type for equipped electrical machinery and part, which to be compared with machinery in Test Piece, that temperature rise should be same, or lower that Test Piece (and even multi-Electric machinery or parts caused Temperature rise lower than machinery equipped in Test Piece, and without partial test, are required a confirmed description, even attached data describing temperature rise is lower than machinery in Test Piece, are not included on Similar Type

(3) Electric Specification

The electric specification of equipped machinery or part is lower and Test piece are Similar Type

(4) Number equipped

Equipped electric machinery or parts are less than Test Piece is regarded on Similar Type.

(5) Operation principle、operation mechanism of in-equipped

Operation principle or mechanism are same, it's regarded as Similar Type, even electric machinery Type, structure differ,

(6) Allocation of in-equipped

If there is micro change on electric and included as Similar Type, except obviously affect explosion pressure, flame runs random, temperature rise.

(7) Name

If type of Electric machinery or parts, number of in equipped are change (e.g.: number of Electric machinery become zero condition)makes flame proof apparatuses to change its name, that not regard as Similar Type.

2.7 Installation Style

So-called installation type is, how to install electric machinery on ground, wall, or installation direction and angle, etc.

Electric machinery is same that enclosure, in-equipped, installed on surface of machinery, parts are the same, if only installation type of enclosure differs from Test Piece, that the following are regarded as Similar Type.

(1) Temperature Rise

Type of installation that not affect temperature rise, It can claims to be a Similar Type.

(2) Mechanic Affection

Even installation type is changed. It keeps flameproof machinery from bad affection, is regarded as Similar Type. So-called mechanic affection is external force impact makes fastener overload.

(3) Protection Structure

Even installation type is changed, it makes no affection to protection

structure of Enclosure is regarded as Similar Type.

2.8 Specification

The specification of Similar Type is lower than test Piece.

- (1) Power applied lower than test Piece specification, the specification mark on bulletin that the power lower than specified test Piece is regarded as Similar Type
E.g.: Test Piece specification is 500V/5A, 100V/25A, and 200V/12A...are regards as Similar Type
- (2) Power applied on lower-than-test specification, even on mark on bulletin, on Similar Type Application is not required, on (1) example, application with 500V/5A(application do not write "Max specification")
- (3) Type of specification (Operation type on Electric machinery) differed, is not regarded as Similar Type.
E.g.: the following A~C, regardless as Similar Type.
 - A. Serial specification,
 - B. Short time specification (30 min).
 - C. Repeatedly specification (55% specification)

In A and B, the operation time and load time ration different are not Similar Type.

2.9 Specific Electric machinery is considerable as extent of Similar Type.

2.9.1 3 phase induction motor

3 phase motor of flame proof as for Similar Type is referring to 2,1~2,8 and determine the conditions as follows:

- (1) Enclosure and Test Piece are Similar Type, and inside volume, polar number, ventilation condition in enclosure doesn't affect exposition pressure, It is regarded as Similar Type, but, temperature rise of enclosure is same as Test Piece or lower, that needs clear description, To consider as follows:
 - A. In Similar Type regarding to inside volume, along the length of frame, by reducing practical inside volume of Rotors core are the same that long frame taken as Test Piece, while shorter frame is regarded as Similar Type
 - B. Inside structure of Enclosure is same, but installation different, that takes as Similar Type. But footrest structure differ from post structure of flange shape, that is regardless as Similar Type.
 - C. Different size or structure gas hole or ventilation of loading side and anti-load side that is regardless as Similar Type.
 - D. Specified torque is higher than Test piece, that is not Similar Type.
 - E. Either temperature rise is same or lower, or horse power is lower, is Similar Type
- (2) Thru part of rotary shaft that Gap made is to prevent flame runs random, even the diameter of shaft differs from Test Piece the following condition is matched to take as Similar Type.
 - A. Joint of thru part, which depth and gap are same.
 - B. Difference is less than 20mm of rotary shaft diameter on load side and anti-load side, and the small shaft diameter is 0/8 times to big shaft diameter.
 - C. Test Piece applying, includes all Similar Type's biggest and smallest shaft diameter.
- (3) The product is different voltage from Test Piece, If its design may not make Test Piece to rise temperature, cause current density, magnet beam loss, is regarded as Similar Type. But extent of Similar Type excludes mixed high-low voltage, and

high voltage for 2kV、3kV、6kV are not Similar Type one another.

- (4) For frequency, if Test piece is 50Hz in frequency, output work is less than 60Hz of Test piece is regarded as Similar Type meantime, it rules motor of load-time-ratio and ventilator, considers cooling condition, if temperature rise do obviously lowers, that Test Piece of 60Hz is same 50Hz products as Similar Type.
- (5) RPM and shapes differ from internal and external fan, ventilation condition differs from Test Piece, that are not Similar Type. But, external fan is made of plastic, same shape, and size as metallic fan that regarded as Similar Type.
- (6) Motor driven by commentator, Similar Type should consider following terms:
 - A. Wave shape of power output ration, is different from Test Piece, is regardless as Similar Type.
 - B. As illustrated V-F same property, voltage differs from Test Piece, is regardless as Similar Type.
 - C. Test Piece with fixed torque, if torque reduced, that Similar Type is available.

2.9.2 Illuminate

In addition to follow the requirement of clause 2.1~2.8, the following items should be followed:

- (1) For including the extent of Similar Type, that lamp applied as set table as follows:

Type of Illuminate	Lamp Specification Applicable
Incandescent	Fame Proof Lighting (JEL 112)
	General Usage (JIS C 7501)
	Marine (JIS F 8407)
Fluorescent	Engine (JIS C 7601)
High Pressure Mercury	High Pressure Mercury (JIS C 7604)
High Pressure Sodium	High Pressure Sodium (JEL 207)

As for instant switch on round lamp and mercury lamp with ballast built-in, due to unavailable for specification, now, that can't regard as Similar Type. But if it is equipped with same type of lamp, it can be classified as Similar Type.

- (2) Socket's structure, size of Similar Type should be same as Test Piece
- (3) Lamp size of Similar Type should be same as Test Piece.
- (4) Globe of lighting, Test Piece equipped with guard, are same Similar Type as lighting without guard but with globe,
- (5) Lighting with or without guard is regarded as Similar Type.
- (6) Test Piece, of which guard or reflector are removed, if it's clear describing that replacement doesn't affect flame proof property, caused of temperature rise, and external damage protection
- (7) Material size of support which is composed of the part of apparatus, and installation structure is different from Test Piece, that are not Similar Type, but if pendant pipe is shorter than Test piece, that Similar Type available.

2.9.3 Socket type thermal couple and Socket type thermal probe thermal couple and probe of flame proof structure, the extent of Similar Type is to fill with inorganic powder, according to 2.1~2.8, and in observance of the following:

- (1) Type of filler and material of socket, if differs, is not Similar Type. This is to think about socket is part of enclosure, that impact Test performs discrepant.
- (2) External diameter is different, it's limited to regard as Similar Type, but in the time, only equip with smallest diameter, thinnest wall of socket as Test Piece.
- (3) Shorter socket than Test Piece that is Similar Type.

2.10 Conduit, wire,

2.10.1 Basic type of consideration conduit wire in 3 categories:

- A. External wire directly conduits into Enclosure (direct-wire-conduit)
- B. External wire conduits into terminal box (Terminal Box-wire-conduit)
- C. Through terminal box connect to main enclosure (Terminal box-enclosure)

Above mentions A and B, must partially consider the extent of Similar Type due to 1 wiring is enough. Besides, 2.10, Terminal box structure is assumed as flame proof stated. If terminal box is increase safety and pressurized enclosure, to refer 4.9 or 3.3(9)

2.10.2 Resemble

Type for Body-Terminal wire led.

- (1) The difference between type of wire led, and Test Piece, regardless as Similar Type.
- (2) If category of wire differs from Test Piece, do affect flame-resistance thermal-resistance prevention to flame-run-random, that Similar Type unavailable.
- (3) Size of wire, Number of fasteners differ from Test Piece, is not taken as Similar Type, but against voltage, current of Similar Type that various voltage, current, size of wire, Number and type of fastener are changed, regarded as Similar Type as exemplified. Meantime, different rotation type of motor, makes size of wire, number and size of fastener different, that Similar Type is available, but in this condition, more confirmation that mark drawing with size details. 1 voltage to 1 size (fastener number) same output, same voltage is unchanged.
- (4) Conduit number of Similar Type that reduced conduit number is Similar Type.

Output (kW)	Voltage (V)	3 wires				6 wires			
		Wire section (mm ²)	Wire O. Diameter (mm)	Wire Tolerance Current	Wire Tolerance Temperature	Wire Section (mm ²)	Wire O. diameter (mm)	Wire Tolerance Current	Wire Tolerance Temperature
50	200	10	10.5			6.5	8.0		
	220								
	380								
	400	6.5	8.0						
	415								
35	200	6.5	8.0			6.5	8.0		
	220								
	380								
	400								
	415								

50 In square Bracket is Test Piece

2.10.3 Similar Type of external wire led in

- (1) Electric machinery with independent terminal box, which led-in type. But elastic-Rubber covered led-in type (here after call packaging type, if required for gas explosive atmosphere that called flame proof packaging type), or hardener compound sealed led-in type (here after call sealer type, or required for gas explosive atmosphere that called flame proof sealer type) Any Test Piece lead- in from ceiling connector (here after called cable screw gland type, required for gas

explosive atmosphere, called cable screw sealer type) can be taken as Similar Type. Lead-in from ceiling connect for gas explosive atmosphere as Similar Type that attached drawing requires marking structure drawing of ceiling connector and installation location drawing, or written “around external wire lead-in area, equipped ceiling connector”

- (2) External wire direct lead-in Electric machinery, differs from Test Piece’s-is regardless as Similar Type. Although it differs from Test Piece, but it if must be regarded as Similar Type. It is to Assign ITRL to confirm for performance of flame proof and to confirm lead-in type for electric machinery. On the application, also apply the application for new specification, But Assigned test can’t apply for another Resemble
- (3) Lead in type are same, but structure, size different that, to consider Similar Type same requirement of To install machinery on enclosure surface, but pay more attention as follows:
 - A. All entries equipped on Similar Type, must be equipped on Test Piece. This is to consider the property of prevention flame-run-random of all introduce entries.
 - B. Entries applied on surface differs from Test Piece is not regarded as Similar Type.
 - C. Plug for pass-thru of Entry o Similar Type, must be same plug in structure, size on Test Piece. Reason is same with A.
- (4) Test Piece attached wire that wire category or size is different from each other, it can’t be called as Similar Type.
- (5) Ambient temperature to limit the category of wire, appropriate or inappropriate, only determine by the specific temperature tolerance.

3. Scope of Similar Type for pressurizing explosion protection of electrical apparatus.

3.1 Similar Type covers conditions:

Aiming at scope of Similar Type for pressurizing explosion protection, at least, one of the following conditions should be met. The individual criteria of Similar Type for each condition will be described in clause 3.2.

Required condition for Similar Type	
Material	• Flame proof Enclosure’s material • Gas conduit material • Air tight seal material
Structure (shape, size)	• Cooling type
Built in machinery (parts)	• Category of built-in machinery, specification of parts and layout status
Name	• Name of flame proof Electric machinery

3.2 The type of consideration for material

- (1) Pressurized enclosure and gas conduit are the subject of Impact Test. If the material is different, the property of impact resistance will be different. Therefore different enclosure material with the Test Piece, it can not be called Similar Type.
- (2) The thermal stability will be changed due to different packing material, and do affect protection type. Therefore the different packing material from Test Piece can not be classified as Similar Type.

3.3 Consideration type of structure

- (1) Protection type concerned is based on flame proof type (Refer to 2,3(1)). In other words exception of flame proof property is not affected by changed part, otherwise the difference between Test Piece and protection existed that cannot call Similar Type
- (2) Cooling type differs from Test Piece (Refer to 2,3(2)), according to flame proof enclosure structure, it can not be called Similar Type.
- (3) Structure of enclosure differs from Test Piece that not called Resemble. But if micro change doesn't affect, flame proof protection that Similar Type available.
- (4) Joint are different in packing shape, size, that Similar Type is unavailable. Different shape, size cause internal pressure maintained different.
- (5) Layout, number, size, structure of thru-hole, only refers to flame proof enclosure structure, if any smaller thru-hole than Test Piece, where is for electric machinery that Similar Type is available.
- (6) Built-in electric machinery and parts in Enclosure, Shall standard refer to flame proof structure.
- (7) Installation type, shall standard refer to flame proof protection structure
- (8) Fixing specification, shall standard refer to flame proof structure.
- (9) Wire introduction, shall standard refer to flame proof protect structure, but, if in increased Safety, just Refer to 2,10 protection type of packing to choose various of packaging type, either Solid Adhesive or conduit of pressure resistance fastener, Solid Adhesive or conduit fastener description of Joint.

4. The extent of Similar Type for Electrical machinery of increased safety.

4.1 Requirement of Similar Type

For electrical machinery of increase safety, at least, as same the following table marked condition as required that the extent Similar Type is available.

Condition for Similar Type required	
Material	• Material of enclosure fastener (free from untie) changed. • Packing material.
Structure affecting insulation part	• Cooling type • Structure of enclosure (shape, size, thickness, manufactured type; joint surface of clearance's structure, size; size, position, pitch, reinforce-post, fastness structure)
Affecting insulation part	Insulation material, insulation distance, creepage distance
Name	Name of electrical machinery for gas explosion atmosphere protection.

4.2 Consideration type for material

(1) Material of Enclosure

Material of enclosure may affect impact test result, so material applied is different from Test Piece that enclosure is taken as Similar Type. But Bolt/screw resist to loose of which material may be changed, if consider the mechanic strength, may be available as Similar Type.

- (2) Material of parts attached outside enclosure.
Parts attached outside of enclosure, and material of Reel-wire for motor, shall standard require flame proof protection.

4.3 Consideration Type of structure

- (1) Protection type and cooling Type
Aiming at protection type and cooling type, shall refer to (2,3(1) and (2) standard of flame proof protection).
- (2) Structure of Enclosure
Structure of Enclosure(shape, size, thickness, manufacture type size, structure of clearance of joint surface; size, position, pitch, reinforce post, fastness structure of Bolt/ screw free from loose), differ from Test Piece, that Similar Type is unavailable.
- (3) Ballast of luminaries
Ballast on luminaries of discharge, due to difficult to determine heating situation, that changed on structure is unavailable as Similar Type
- (4) Enclosure which conduit applied
Applied conduit on enclosure, which do not affect temperature rise, that length of conduit is shorter than Test Piece, so Similar Type is available.
- (5) Shape, size of package on joint surface differs from Test Piece, do affect protection type of electric machinery directly, so Similar Type is unavailable.
- (6) Structure of Thru-hole
In order to mount parts, device on enclosure surface, but structure, size, number, layout of thru-hole, shall refer to standard of flame proof protection (2.4). If in protect type of increased safety, mount parts device on same position of thru-hole, which is smaller than Test Piece, that Similar Type is available.

4.4 Composition of machinery

Electric machinery made of a number of increased safety structure, could be regarded as Similar Type, even some pieces, or some part removed that property of machinery left is not affected, it still called Similar Type, according to mechanism of machinery. Thanks to structure of machinery changed, make name of machinery changed, that to add now certification item as required, so Similar Type is unavailable. Structure change of machinery, Test Piece required to safety condition as follows:

- (1) Element of composition of Test Piece includes all various machineries.
- (2) Machineries on Test Piece shall be more than individual machinery.
- (3) Different structure on interconnection of every individual machinery that all interconnection structure of Test Piece, shall be confirmed. In the principle, connection part unused need less that hole is thru.
- (4) Introduction number on connection part that Test Piece shall equip.
- (5) To determine the extent of Similar Type shall assess every individual machinery composed protection property for increased safety. Due to it's hard to predict immeasurable situation on every individual machinery during Assembly.
- (6) In order to include the extent of Similar Type that both composition type of machinery and function, purpose of composed machinery are required as same as

Test Piece.

4.5 Electric machinery and parts built in Enclosure

Electric machinery and parts Built to in enclosure differ from Test Piece, in principle, It's not Similar Type. If it refers to general specification, and safety condition of increase safety structure, based on criteria of flame proof explosion protect (2.6), that include in extent of Similar Type. And, about the structure of flame proof protection, please be award the follows.

- (1) Electric machinery and parts Built-in, generally there is bared part (e.g. Terminal connection), insulating material and distance (insulating space distance, surface distance) do directly affect property of increased safety; therefore, shape, material size of Built-in electrical machinery and parts differs from Test piece that Similar Type is unavailable.
- (2) When lay out of built-in Electric machinery and parts and wiring type, are different from Test Piece, in principle its not Similar Type, except it ensures that temperature does not rise, bare wire is unaffected.
- (3) Installed number of Built=in Electric machinery and parts, of which power consumed is same or less that Test Piece, are in 1 of conditions of the extent of Similar Type.

4.6 Installation type

To install Electric machinery of increased safety structure in Similar Type is based on gas explosive atmosphere structure (2.7).

4.7 Mounting criteria

To mount Electric machinery of increased safety in Similar Type, that refers to criteria of gas Explosive atmosphere structure (2.8)

4.8 Consideration type foe specified electric machinery of “Similar Type

4.8.1 3 phase induction motor

3 phase induction motor of increase safety in extent of Similar Type, basically consideration type are same as clause 4.1~4.7 stated.

- (1) Specified criteria of motor that basic temperature rose then specified-criteria motor rotated, is determined as Similar Type. To be Similar Type, it shall satisfy the following conditions:
 - A. Output is less than Test Piece
 - B. Operation time is same as Test piece.

- C. Rotation time of specified type is same as Test Piece.
 - D. To the motor driven by count commentator that output wave shape of power (input wave shape of motor) and property of V-F shall be same as Test Piece
- (2) The structure, shall satisfy the following conditions.
- A. Quantity of electrode shall be same.
 - B. Number of frame and thickness of Rotor core shall be same.
 - C. Structure of cage count Rotor and air gap shall be same
- (3) Voltage and frequency shall follow 2.9.1 (3) and (4).

4.8.2 Illuminate

- (1) For Illuminate of increased safety, the following condition shall be satisfied that it is regarded as Similar Type.
- A. Light source shall be same, and works of light source (specified type consumed power) shall be less than Test Piece.
 - B. Bulb or Tube that shape shall be same (when satisfy this condition, if light source type specified consumes less power, it can be regarded as Similar Type; besides, in same size, that the change of light source, power consumes less of specific type, and surface temperature lowered of bulb or tube, are regarded as Similar Type.
 - C. Socket structure shall be same.
- (2) The following indicate the consideration type for part of structure in Similar Type:
- A. Guard of illuminate, to determine by temperature rise effect.
 - B. If Test Piece without guard, to test with guarded Test Piece.
 - C. Part of illuminate is pendant or stanchion mounting, if the length of pendant of pipe of stanchion is shorter than Test Piece that Similar Type is available.

4.9 Wire introduction

Consideration type for Similar Type of wire introduction for increased safety of Electric machinery, basically based on gas explosive atmosphere (2.10), but the body equipped with independent Terminal box, that pay more attentions to wire introduction between Terminal boxes as follows.

- (1) Embedded, packed, solid Adhered-has every individual structure and insulation property, that differ property of gas explosive atmosphere the Similar Type are unavailable one another.
- (2) Wire makes the tolerance of temperature and current different, that different wire

is not Similar Type

- (3) Eire or imbedded size differs from Test Piece, in principle it is not Similar Type. It there is standard different for wire or imbedded of current and voltage that Similar Type is available. Detail to refer to gas Explosive atmosphere protection structure.

5. Edit guide for “List of Similar Type”

Here explains the guide of edition for “List of Similar Type” of intrinsic safety gas explosive atmosphere protection. To edit “list of additional illustration” and “concept of manufacturer inspection equipment” due to consist with other explosive atmosphere that to refer to 2.3~2.4.

Column “Type” “Specification” recorded description differs from description of Similar Type on New Certification Application form of “Similar Type” that....description of test piece and applied product description shall be listed and described are the condition as required.

5.1 To edit list of “Similar Type “according to system unit.

- (1) System certification, in principle by means of “System” as unit for edition. But “type” and “specification” differs frequently. If it is unchanged in condition of “described system” of 3.2(2). 1 that complete machinery list is done.
- (2) System list edited, that system type on column of type name, shall separate from “type of composed machinery” to clarify the relation between “system type” and “type of composed machinery.”

5.2 To edit “list of Similar Type” by means of machinery unit.

- (1) Certify system, to edit Similar Type list by composed machinery unit.
- (2) Certify system for individual composed intrinsic machinery, that body and every Attached machinery on body, of which machinery list edited according to each “Type” must title including name of machinery (e.g. probe: Similar Type List.)

Similar Type List

Type			Specification
System Type	Probe	Inverter	
OS551-123-AA	ODT-12A	OA-550A	
OS551-133-AA	ODT-13A		
OS551-153-AA	ODT-15A		
OS551-123-AA	ODT-12A	OA-550A	
OS551-133-AA	ODT-13A		
OS551-153-AA	ODT-15A		

Remark: ☐ Square bracket, Represents Test piece of certification.

Record. e.g. 2 Composing factor and more recording number of type record, that “Type” record example:

Similar Type List of Probe

Type				Specification
DM25-03	-※	※	※	
	-A	1	-1	
	-B	2	-2	
	-C	3	-3	
	-D	5	-4	
	-X	9	-9	

Remark:

1. On table ☐ is representative of test piece.
2. Type is chose an English letter or Arabic number under symbol ※, composed accordingly.

Application and delivery address and correspondent:

ITRI

Green Energy and Environmental Laboratories

Room 809, Pavilion 51, No. 195, sect. 4 Chung-Shing Road, Chu Dong, Hsin-Chu,
Taiwan

Tel: +886-3-591-6457

Fax: +886-3-591-6457, +886-3-583-4405

E-mail: sky@itri.org.tw

Application Period: Weekday Monday ~ Friday 09:00 AM~12:00 PM, 13:00
PM~17:00 PM Weekend and holiday out duty

Delivery Test piece after completion of application procedure.

Test Sample delivery to:

Courier or cargo delivery available.

Addressee:

ITRI

Green Energy and Environmental Laboratories

Electric Machinery Characteristic Laboratory

Mechanical and Electrical Characteristic Test Laboratory

Build. 24-1, 195, Sec. 4 Chung-Shing Road,

Chu-dong county,

Hsin-Chu Shieh, Taiwan

R.O.C.